lenovo

ThinkCentre
Hardware Maintenance Manual



Machine Types: 4466, 4468, 4471, 4473, 4474, 4476, 4477, 4479, 4480, 4485, 4495, 4496, 4497, 4498, 4499, 4503, 4504, 4512, 4513, 4514, 4517, 4518, 4524, 4554, 7005, 7021, 7023, 7032, 7033, 7034, 7035, 7049, 7052, 7053, 7072, 7073, 7079, 7136, 7177, and 7178

lenovo

ThinkCentre
Hardware Maintenance Manual

Machine Types: 4466, 4468, 4471, 4473, 4474, 4476, 4477, 4479, 4480, 4485, 4495, 4496, 4497, 4498, 4499, 4503, 4504, 4512, 4513, 4514, 4517, 4518, 4524, 4554, 7005, 7021, 7023, 7032, 7033, 7034, 7035, 7049, 7052, 7053, 7072, 7073, 7079, 7136, 7177, and 7178

Note: Before using this information and the product it supports, be sure to read and understand Chapter 2 “Safety information” on page 3 and Appendix A “Notices” on page 479.

Fourth Edition (February 2012)

© Copyright Lenovo 2011, 2012.

LIMITED AND RESTRICTED RIGHTS NOTICE: If data or software are delivered pursuant a General Services Administration “GSA” contract, use, reproduction, or disclosure is subject to restrictions set forth in Contract No. GS-35F-05925.

Contents

Chapter 1. About this manual 1
Important safety information 1
Important information about replacing RoHS compliant FRUs 1

Chapter 2. Safety information 3
General safety 3
Electrical safety 3
Voltage-selection switch 5
Safety inspection guide 5
Handling electrostatic discharge-sensitive devices 6
Grounding requirements 6
Safety notices (multi-lingual translations) 6

Chapter 3. General information 33
Lenovo Welcome. 33
Lenovo ThinkVantage Tools 33
Lenovo Solution Center 33
SimpleTap 33
Lenovo ThinkVantage Toolbox 33
ThinkVantage Productivity Center 34
Additional information resources 34
Specifications 34
For machine types: 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178. 34
For machine types: 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177. 35

Chapter 4. General checkout 37
Problem determination tips. 37

Chapter 5. Diagnostic programs . . . 39
Lenovo ThinkVantage Toolbox 39
Lenovo Solution Center 39
PC-Doctor for DOS 40
Creating a diagnostic disc 40
Running the diagnostic program from the diagnostic disc. 40
Navigating through the diagnostic programs . 40
Running tests 40
Viewing the test log 42

Chapter 6. Using the Setup Utility program 43
Starting the Setup Utility program 43
Viewing or changing settings 43
Using passwords. 43
Password considerations. 44
Power-on password. 44
Administrator password 44
Hard Disk Password. 44
Setting, changing, or deleting a password . . 44
Erasing lost or forgotten passwords (clearing CMOS) 45
Enabling or disabling a device 45
Selecting a startup device 46
Selecting a temporary startup device 46
Selecting or changing the startup device sequence 46
Smart performance choices 46
Exiting the Setup Utility program 47

Chapter 7. Symptom-to-FRU index . . 49
Hard disk drive boot error 49
Power Supply Problems 49
Diagnostic error codes 49
Beep symptoms 67
POST error codes 68
Miscellaneous error messages 69
Undetermined problems 71

Chapter 8. Replacing FRUs (Machine Types: 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178.). 73
Locations. 73
Locating connectors, controls, and indicators on the front of your computer 74
Locating connectors on the rear of your computer 75
Locating components 76
Locating parts on the system board 77
Locating internal drives 78
Handling static-sensitive devices 78
Installing or replacing hardware 79
Removing the computer cover. 79
Removing and reinstalling the front bezel . . 80
Installing or replacing a PCI card. 81
Installing or replacing a memory module. . . 84
Installing or replacing the optical drive . . . 86

© Copyright Lenovo 2011, 2012

Installing or replacing the card reader 88
Replacing the battery 92
Replacing the power supply assembly . . . 93
Replacing the heat sink and fan assembly . . 95
Replacing the microprocessor 97
Replacing the system board 100
Replacing the primary hard disk drive 103
Replacing the secondary hard disk drive. . . 105
Replacing the front fan assembly 107
Replacing the rear fan assembly 108
Replacing the front audio and USB assembly 110
Replacing the internal speaker. 111
Completing the parts replacement 113

Chapter 9. Replacing FRUs (Machine Types: 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177.). 115

Locations 115
Locating connectors, controls, and indicators on the front of your computer 116
Locating connectors on the rear of your computer 117
Locating components 118
Locating parts on the system board 119
Locating internal drives 120
Handling static-sensitive devices 120
Installing or replacing hardware 121
Opening the computer cover 121
Removing and reinstalling the front bezel . . 122
Accessing the system board components and drives 124
Installing or replacing a memory module. . . 125
Installing or replacing a PCI card 126
Installing or replacing the card reader 128
Replacing the battery 133
Replacing the hard disk drive 134
Replacing the optical drive 137
Replacing the heat sink and fan assembly . . 139
Replacing the power supply assembly . . . 142
Replacing the microprocessor 147
Replacing the system board 150
Replacing the system fan assembly 153
Replacing the internal speaker. 155
Replacing the front audio and USB assembly 159
Completing the parts replacement 160

Chapter 10. FRU lists 163

Overall: MT 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178 163
Mechanical FRUs 182
Keyboard and Mouse 194
Adapters and miscellaneous FRUs 250
Power Cords 254
Recovery discs 266
Windows 7 Professional 32 Recovery CD . . 266
Windows 7 Home Basic 32 Recovery CD . . 275
Windows 7 Home Premium 32 Recovery CD 278
Windows 7 Home Premium 64 Recovery CD 278
Windows 7 Professional 64 Recovery CD . . 283
Windows XP Professional 32 Recovery CD . . 291
Windows XP Professionally Generic 32 Recovery CD 296
Windows Vista Business 32 Recovery CD . . 298
Windows Vista Home Basic 32 Recovery CD 299
Overall: MT 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177 301
Mechanical FRUs 326
Keyboard and Mouse 344
Adapters and miscellaneous FRUs 412
Power Cords 416
Recovery discs 431
Windows 7 Professional 32 Recovery CD . . 431
Windows 7 Home Basic 32 Recovery CD . . 442
Windows 7 Home Premium 32 Recovery CD 445
Windows 7 Home Premium 64 Recovery CD 446
Windows 7 Professional 64 Recovery CD . . 451
Windows XP Professional 32 Recovery CD . . 461
Windows XP Professionally Generic 32 Recovery CD 468
Windows Vista Business 32 Recovery CD . . 471
Windows Vista Home Basic 32 Recovery CD 472

Chapter 11. Additional service information 475

Security features 475
Hardware-controlled passwords 475
Operating system password 475
Vital Product Data 475
BIOS levels 475
Updating (flashing) the BIOS from a disc 475
Updating (flashing) the BIOS from your operating system 476

Recovering from a POST and BIOS update failure 476
Power management 477
Advanced Configuration and Power Interface (ACPI) BIOS 477
Automatic Power-On features 477

Appendix A. Notices 479

Television output notice 480
European conformance CE mark 480
Trademarks 480

Index. 481

© Copyright Lenovo 2011, 2012

Chapter 1. About this manual

This manual contains service and reference information for ThinkCentre® computer machine types listed on the front cover. This manual is intended only for trained Service Providers who are familiar with Lenovo® computer products.

Note: Be sure to read and understand the Chapter 2 “Safety information” on page 3 before using the information in this manual.

The “Symptom-to-FRU Index” chapter and the “Additional service information” chapter apply to all ThinkCentre computers.

This manual includes a complete FRU part number list for each machine type listed on the front cover. If you have internet access, the FRU part numbers are also available at:
http://www.lenovo.com/support

Important safety information

Be sure to read all caution and danger statements in this manual before performing any of the instructions.

Veuillez lire toutes les consignes de type DANGER et ATTENTION du présent document avant d'exécuter les instructions.

Lesen Sie unbedingt alle Hinweise vom Typ "ACHTUNG" oder "VORSICHT" in dieser Dokumentation, bevor Sie irgendwelche Vorgänge durchführen

Leggere le istruzioni introdotte da ATTENZIONE e PERICOLO presenti nel manuale prima di eseguire una qualsiasi delle istruzioni

Certifique-se de ler todas as instruções de cuidado e perigo neste manual antes de executar qualquer uma das instruções

Es importante que lea todas las declaraciones de precaución y de peligro de este manual antes de seguir las instrucciones.

تأكد من قراءة كل التحذيرات الموجودة في هذا الكتاب قبل اتباع هذه التعليمات .

执行任何说明之前，请确保已阅读本书中的所有警告和危险声明。

執行任何指示前，請確實閱讀本書中的所有警告及危險聲明。

ודאו שקראתם את כל הודעות האזהרה והסכנה במסמך זה לפני שתבצעו פעולה כלשהי.

본 사용 설명서에 기재된 내용을 실행하기 전에 모든 주의사항 및 위험사항을 숙지하십시오.

Important information about replacing RoHS compliant FRUs

RoHS, the Restriction of Hazardous Substances in Electrical and Electronic Equipment Directive (2002/95/EC) is a European Union legal requirement affecting the global electronics industry. RoHS requirements must be implemented on Lenovo products placed on the market and sold in the European Union after June, 2006. Products on the market before June, 2006 are not required to have RoHS compliant parts. If the parts are not compliant originally, replacement parts can also

© Copyright Lenovo 2011, 2012

be noncompliant, but in all cases, if the parts are compliant, the replacement parts must also be compliant.

Note: RoHS and non-RoHS FRU part numbers with the same fit and function are identified with unique FRU part numbers.

Lenovo plans to transition to RoHS compliance well before the implementation date and expects its suppliers to be ready to support Lenovo's requirements and schedule in the EU. Products sold in 2005 will contain some RoHS compliant FRUs. The following statement pertains to these products and any product Lenovo produces containing RoHS compliant parts.

RoHS compliant ThinkCentre parts have unique FRU part numbers. Before or after June 2006, failed RoHS compliant parts must always be replaced using RoHS compliant FRUs, so only the FRUs identified as compliant in the system hardware maintenance manual or direct substitutions for those FRUs can be used.

Products marketed before June 2006		**Products marketed after June 2006**	
Current or original part	**Replacement FRU**	**Current or original part**	**Replacement FRU**
Non-RoHS	Can be Non-RoHS	Must be RoHS	Must be RoHS
Non-RoHS	Can be RoHS		
Non-RoHS	Can substitute to RoHS		
RoHS	Must be RoHS		

Note: A direct substitution is a part with a different FRU part number that is automatically shipped by the distribution center at the time of order.

Chapter 2. Safety information

This chapter contains the safety information that you need to be familiar with before servicing a computer.

General safety

Follow these rules to ensure general safety:

- Observe good housekeeping in the area of the machines during and after maintenance.
- When lifting any heavy object:
  1. Ensure you can stand safely without slipping.
  2. Distribute the weight of the object equally between your feet.
  3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
  4. Lift by standing or by pushing up with your leg muscles; this action removes the strain from the muscles in your back. *Do not attempt to lift any objects that weigh more than 16 kg (35 lb) or objects that you think are too heavy for you.*
- Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.
- Before you start the machine, ensure that other service representatives and the customer's personnel are not in a hazardous position.
- Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.
- Keep your tool case away from walk areas so that other people will not trip over it.
- Do not wear loose clothing that can be trapped in the moving parts of a machine. Ensure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.
- Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, approximately 8 centimeters (3 inches) from the end.
- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.
  Remember: Metal objects are good electrical conductors.
- Wear safety glasses when you are: hammering, drilling, soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.
- After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.
- Reinstall all covers correctly before returning the machine to the customer.

Electrical safety



CAUTION:
Electrical current from power, telephone, and communication cables can be hazardous. To avoid personal injury or equipment damage, disconnect the attached power cords, telecommunication systems, networks, and modems before you open the centre covers, unless instructed otherwise in the installation and configuration procedures.

Observe the following rules when working on electrical equipment.

© Copyright Lenovo 2011, 2012

Important: Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents. Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do not use this type of mat to protect yourself from an electric shock.

- Find the room emergency power-off (EPO) switch, disconnecting switch, or electrical outlet. If an electrical accident occurs, you can then operate the switch or unplug the power cord quickly.
- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
- Disconnect all power before:
  - Performing a mechanical inspection
  - Working near power supplies
  - Removing or installing Field Replaceable Units (FRU)
- Before you start to work on the machine, unplug the power cord. If you cannot unplug it, ask the customer to power-off the wall box that supplies power to the machine and to lock the wall box in the off position.
- If you need to work on a machine that has exposed electrical circuits, observe the following precautions:
  - Ensure that another person, familiar with the power-off controls, is near you.
    Remember: Another person must be there to switch off the power, if necessary.
  - Use only one hand when working with powered-on electrical equipment; keep the other hand in your pocket or behind your back.
    Remember: There must be a complete circuit to cause an electric shock. By observing the above rule, you may prevent a current from passing through your body.
  - When using a tester, set the controls correctly and use the approved probe leads and accessories for that tester.
  - Stand on suitable rubber mats (obtained locally, if necessary) to insulate you from grounds such as metal floor strips and machine frames.

  Observe the special safety precautions when you work with very high voltages; these instructions are in the safety sections of maintenance information. Use extreme care when measuring high voltages.
- Regularly inspect and maintain your electrical hand tools for safe operational condition.
- Do not use worn or broken tools and testers.
- *Never assume* that power has been disconnected from a circuit. First, *check* that it has been powered-off.
- Always look carefully for possible hazards in your work area. Examples of these hazards are moist floors, nongrounded power extension cables, power surges, and missing safety grounds.
- Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive; such touching can cause personal injury and machine damage.
- Do not service the following parts with the power on when they are removed from their normal operating places in a machine:
  - Power supply units
  - Pumps
  - Blowers and fans
  - Motor generators

  and similar units. (This practice ensures correct grounding of the units.)
- If an electrical accident occurs:
  - Use caution; do not become a victim yourself.
  - Switch off power.
  - Send another person to get medical aid.

Voltage-selection switch

Some computers are equipped with a voltage-selection switch located near the power-cord connection point on the computer. If your computer has a voltage-selection switch, ensure that you set the switch to match the voltage available at your electrical outlet. Setting the voltage-selection switch incorrectly can cause permanent damage to the computer.

If your computer does not have a voltage-selection switch, your computer is designed to operate only at the voltage provided in the country or region where the computer was originally purchased.

If you relocate your computer to another country, be aware of the following:

- If your computer does not have a voltage-selection switch, do not connect the computer to an electrical outlet until you have verified that the voltage provided is the same as it was in the country or region where the computer was originally purchased.
- If your computer has a voltage-selection switch, do not connect the computer to an electrical outlet until you have verified that the voltage-selection switch is set to match the voltage provided in that country or region.

If you are not sure of the voltage provided at your electrical outlet, contact your local electric company or refer to official Web sites or other literature for travelers to the country or region where you are located.

Safety inspection guide

The intent of this inspection guide is to assist you in identifying potentially unsafe conditions on these products. Each machine, as it was designed and built, had required safety items installed to protect users and service personnel from injury. This guide addresses only those items. However, good judgment should be used to identify potential safety hazards due to attachment of features or options not covered by this inspection guide.

If any unsafe conditions are present, you must determine how serious the apparent hazard could be and whether you can continue without first correcting the problem.

Consider these conditions and the safety hazards they present:

- Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock).
- Explosive hazards, such as a damaged CRT face or bulging capacitor
- Mechanical hazards, such as loose or missing hardware

The guide consists of a series of steps presented in a checklist. Begin the checks with the power off, and the power cord disconnected.

Checklist:

1. Check exterior covers for damage (loose, broken, or sharp edges).
2. Power-off the computer. Disconnect the power cord.
3. Check the power cord for:
   a. A third-wire ground connector in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and frame ground.
   b. The power cord should be the appropriate type as specified in the parts listings.
   c. Insulation must not be frayed or worn.
4. Remove the cover.

5. Check for any obvious alterations. Use good judgment as to the safety of any alterations.
6. Check inside the unit for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.
7. Check for worn, frayed, or pinched cables.
8. Check that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.

Handling electrostatic discharge-sensitive devices

Any computer part containing transistors or integrated circuits (ICs) should be considered sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. Protect against ESD damage by equalizing the charge so that the machine, the part, the work mat, and the person handling the part are all at the same charge.

Notes:

1. Use product-specific ESD procedures when they exceed the requirements noted here.
2. Make sure that the ESD protective devices you use have been certified (ISO 9000) as fully effective.

When handling ESD-sensitive parts:

- Keep the parts in protective packages until they are inserted into the product.
- Avoid contact with other people while handling the part.
- Wear a grounded wrist strap against your skin to eliminate static on your body.
- Prevent the part from touching your clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.
- Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
- Select a grounding system, such as those listed below, to provide protection that meets the specific service requirement.

  Note: The use of a grounding system is desirable but not required to protect against ESD damage.

  – Attach the ESD ground clip to any frame ground, ground braid, or green-wire ground.
  – Use an ESD common ground or reference point when working on a double-insulated or battery-operated system. You can use coax or connector-outside shells on these systems.
  – Use the round ground-prong of the ac plug on ac-operated computers.

Grounding requirements

Electrical grounding of the computer is required for operator safety and correct system function. Proper grounding of the electrical outlet can be verified by a certified electrician.

Safety notices (multi-lingual translations)

The caution and danger safety notices in this section are provided in the following languages:

- English
- Arabic
- Brazilian/Portuguese
- Chinese (simplified)
- Chinese (traditional)

- French
- German
- Hebrew
- Italian
- Korean
- Spanish



DANGER

Electrical current from power, telephone and communication cables is hazardous.

To avoid a shock hazard:

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedure**s.
- **Connect and disconnect cables as described in the following tables when installing, moving, or opening covers on this product or attached devices.**

To Connect	To Disconnect
1. Turn everything OFF. 2. First, attach all cables to devices. 3. Attach signal cables to connectors. 4. Attach power cords to outlet. 5. Turn device ON.	1. Turn everything OFF. 2. First, remove power cords from outlet. 3. Remove signal cables from connectors. 4. Remove all cables from devices.



CAUTION:
When replacing the lithium battery, use only Part Number 45C1566 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of. *Do not:*

- **Throw or immerse into water**
- **Heat to more than 100°C (212°F)**
- **Repair or disassemble**

Dispose of the battery as required by local ordinances or regulations.

CAUTION:
When laser products (such as CD-ROMs, DVD-ROM drives, fiber optic devices, or transmitters) are installed, note the following:

- **Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.**
- **Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.**

DANGER

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following:

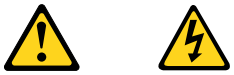
Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.



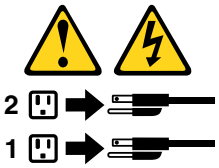


≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

CAUTION:
Use safe practices when lifting.



CAUTION:
The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.





خـــطر

التيـار الكـهربـي المـوجـود بمصـدر الطـاقـة أو أجـهزة التليفـون أو أسـلاك الإتـصالات يشـكل خـطورة.

لـتفادي مخـاطـر الصـدمـات الكـهربـائـية:

لا تحاول توصيل أو فصل أي أسـلاك أو القـيام بعـمليات تـركيب أو صـيانـة أوإعـادة توصـيف لـهذا المنتج أثـناء وجـود عاصـفة كـهربـائـية.

يجـب تـوصـيل كـل أسـلاك الكـهربـاء فـي مخـارج كـهربـاء ذات تـوصـيلات أسـلاك وتـوصـيلات أرضـية صحيـحة
يجـب تـوصـيل أي جـهاز سـيتم الحـاقه بـهذا المـنتج فـي مخارج كـهربـاء ذات تـوصـيلات أسـلاك صحيحة.

وإن أمـكن يـجب اسـتخدام يـد واحـدة فـقط فـي تـوصـيل أو فصـل أسلاك الإشـارة.

لا تحـاول تشغـيل أي جـهاز إذا كـان هنـاك أثـر لحـرق أو مـياه أو تـلف بالمكـونـات
يجـب فصـل أسـلاك الكـهربـاء وأنـظمة الاتصـالات وشـبكات الاتصـال وأجـهزة المـودم الملحـقة قـبل فـتح أغطية الجهاز، مـالـم يـتم طـلب خـلاف ذلك فـي التـعليـمات الخـاصة بالتـركيب والتـوصـيف.
قم بتوصيل وفصل الأسلاك كما هو موضح في الجدول التالي وذلك عند القيام بعمليات التركيب أو النقل أو فتح أغطية هذا المنتج أو الأجهزة الملحقة.

للتوصيل:	للفصل:
قم بإيقاف كل شيء.	قم بإيقاف كل شيء.
أولا، قم بتوصيل كل الأسلاك بالأجهزة.	أولا، قم بفصل كل أسلاك الكهرباء من المخرج.
قم بتوصيل أسلاك الإشارة في لموصلات.	قم بفصل أسلاك الإشارة من الموصلات.
قم بتوصيل أسلاك الكهرباء في المخارج.	قم بفصل كل الأسلاك من الأجهزة.
قم بتشغيل الجهاز.	

تنبيـــه :
عند استبدال البطارية الليثيوم، استخدم فقط رقم الجزء الخاص Part Number 45C1566
أو نوع أخر يكون على نفس مستوى الكفاءة يحدده لك المصنع.
اذا كان النظام الخاص يستخدم معه بطارية ليثيوم قم باستبدالها بنفس النوع الذي تم
صناعته من خلال نفس المصنع. تحتوي البطارية على مادة الليثيوم ويمكن أن تنفجرفي حالة عدم استخدامها
أو التعامل معها بطريقة صحيحة أو عند التخلص منها بطريقة خطأ.

لا تقم بـــ:
- القاء البطارية أو غمرها في الماء
- تسخينها أعلى من ١٠٠ درجة مئوية°و(٢١٢ °
  فهرنهيت)
- بتصليحها أو فكها

تخلص من البطارية طبقا للقانون أو النظام المحلي .

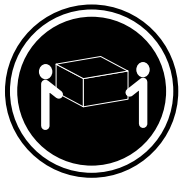
تنبيـــه :
أثناء تركيب منتجات ليزر (مثل CD-ROMsأو وحدة تشغيل DVDأو أجهزة Fiber Optic أو
وحدات الارسال) يجب مراعاة الآتي:

لا تنزع الأغطية. قد ينتج عن نزع أغطية منتج الليزر انفجار أشعة الليزر شديدة الخطورة.
لا يوجد أجزاء يمكن تغييرها داخل الجهاز. قد ينتج عن استخدام تحكمات أو تعديلات أو عمل أي تصرفات أخرى تخالف ما هو محددا هنا الى انفجار أشعة شديدة الخطورة.

خطـــر

تحتوى بعض منتجات الليزر على الفئة دايود ليزر مدمج من الفئة Class 3Aأو Class 3B. يجب مراعاة الآتي .

أشعة الليزر عند الفتح. لا تحدق الى الاشعاع و لا تنظر اليه مباشرة بواسطة أي أجهزة مرئية وتجنب التعرض المباشر للاشعاع .


≥18 kg (37 lbs)

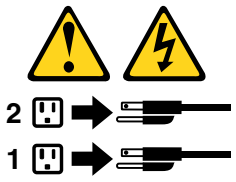

≥32 kg (70.5 lbs)


≥55 kg (121.2 lbs)

تنبيه :
يجب استخدام ممارسات آمنة عند الرفع



تنبيـــه :
لا يقم زر التحكم في التشغيل الموجود على الجهاز والمفتاح الكهربائي الموجود على
لوحة التحكم بايقاف التيار الكهربائي المار بالجهاز. قد يكون للجهاز أكثر من سلك كهربائي واحد.
لايقاف التيار الكهربائي المار بالجهاز، تأكد من فصل جميع أسلاك الكهرباء من مصدر الكهرباء .





PERIGO

A corrente elétrica proveniente de cabos de alimentação, de telefone e de comunicações é perigosa.

Para evitar risco de choque elétrico:

- Não conecte nem desconecte nenhum cabo ou execute instalação, manutenção ou reconfiguração deste produto durante uma tempestade com raios.
- Conecte todos os cabos de alimentação a tomadas elétricas corretamente instaladas e aterradas.
- Todo equipamento que for conectado a este produto deve ser conectado a tomadas corretamente instaladas.
- Quando possível, utilize apenas uma das mãos para conectar ou desconectar cabos de sinal.
- Nunca ligue nenhum equipamento quando houver evidência de fogo, água ou danos estruturais.
- Antes de abrir tampas de dispositivos, desconecte cabos de alimentação, sistemas de telecomunicação, redes e modems conectados, a menos que especificado de maneira diferente nos procedimentos de instalação e configuração.
- Conecte e desconecte os cabos conforme descrito na tabela apresentada a seguir ao instalar, mover ou abrir tampas deste produto ou de dispositivos conectados.

Para Conectar:	**Para Desconectar:**
1. DESLIGUE Tudo. 2. Primeiramente, conecte todos os cabos aos dispositivos. 3. Conecte os cabos de sinal aos conectores. 4. Conecte os cabos de alimentação às tomadas. 5. LIGUE os dispositivos.	1. DESLIGUE Tudo. 2. Primeiramente, remova os cabos de alimentação das tomadas. 3. Remova os cabos de sinal dos conectores. 4. Remova todos os cabos dos dispositivos.

CUIDADO:

Ao substituir a bateria de lítio, utilize apenas uma bateria com Número de Peça 45C1566 ou um tipo de bateria equivalente recomendado pelo Se o seu sistema possui um módulo com uma bateria de lítio, substitua-o apenas por um módulo do mesmo tipo e do mesmo fabricante. A bateria contém lítio e pode explodir se não for utilizada, manuseada ou descartada de maneira correta.

Não:

- Jogue ou coloque na água
- Aqueça a mais de 100°C (212°F)
- Conserte nem desmonte

Descarte a bateria conforme requerido pelas leis ou regulamentos locais.

PRECAUCIÓN:

Quando produtos a laser (como unidades de CD-ROMs, unidades de DVD-ROM, dispositivos de fibra ótica ou transmissores) estiverem instalados, observe o seguinte:

- Não remova as tampas. A remoção das tampas de um produto a laser pode resultar em exposição prejudicial à radiação de laser. Não existem peças que podem ser consertadas no interior do dispositivo.
- A utilização de controles ou ajustes ou a execução de procedimentos diferentes dos especificados aqui pode resultar em exposição prejudicial à radiação.

PERIGO

Alguns produtos a laser contêm diodo de laser integrado da Classe 3A ou da Classe 3B. Observe o seguinte:

Radiação a laser quando aberto. Não olhe diretamente para o feixe a olho nu ou com instrumentos ópticos e evite exposição direta ao feixe.



≥18 kg (37 lbs)



≥32 kg (70.5 lbs)



≥55 kg (121.2 lbs)

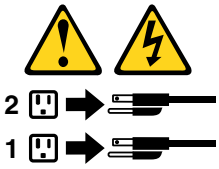
CUIDADO:

Utilize procedimentos de segurança para levantar equipamentos.



CUIDADO:

O botão de controle de alimentação do dispositivo e o botão para ligar/desligar da fonte de alimentação não desligam a corrente elétrica fornecida ao dispositivo. O dispositivo também pode ter mais de um cabo de alimentação. Para remover toda a corrente elétrica do dispositivo, assegure que todos os cabos de alimentação estejam desconectados da fonte de alimentação.





危险

电源、电话和通信电缆中的电流是危险的。

为避免电击危险：

- 请勿在雷电期间连接或断开任何电缆的连接，或者对本产品进行安装、维护或重新配置。
- 将所有电源线连接到正确连线和妥善接地的电源插座。
- 将所有要连接到该产品的设备连接到正确连线的插座。
- 如果可能，请仅使用一只手来连接或断开信号电缆的连接。
- 切勿在有火、水、结构损坏迹象的情况下开启任何设备。
- 在打开设备外盖之前请断开已连接的电源线、远程通信系统、网络和调制解调器，除非在安装和配置过程中另有说明。
- 当安装、移动或打开该产品或连接设备的外盖时，请按照下表所述来连接或断开电缆的连接。

要连接	要断开连接
1. 切断所有电源。 2. 首先将所有电缆连接到设备。 3. 将信号电缆连接到接口。 4. 将电源线连接到插座。 5. 开启设备。	1. 切断所有电源。 2. 首先从插座上拔出电源线。 3. 从接口上拔出信号电缆。 4. 从设备上拔出所有电缆。

警告：
更换锂电池时，请仅使用部件号为 45C1566 的电池或制造商推荐的同类电池。如果您的系统有包含锂电池的模块，请仅使用同一制造商生产的相同模块类型来替换该模块。该电池中含有锂，如果使用、操作或处理不当，可能会发生爆炸。

切勿：

- 投入或浸入水中
- 加热到 100°C（212°F）以上
- 维修或拆卸

请按照当地法令或条例的要求处理电池。

警告：
安装激光产品（例如 CD-ROM、DVD-ROM 驱动器、光纤设备或发射设备）时，请注意以下声明：

- 请勿卸下外盖。卸下激光产品的外盖可能导致遭受激光辐射的危险。该设备内没有可维修的部件。
- 如果不按照此处指定的过程进行控制、调整或操作，则有可能导致遭受辐射的危险。

危险

某些激光产品包含嵌入式 3A 类或 3B 类激光二极管。请注意以下声明：

打开后有激光辐射。请勿注视光束，请勿直接用光学仪器查看，并请避免直接暴露在光束中。



≥18 千克（37 磅）



≥32 千克（70.5 磅）

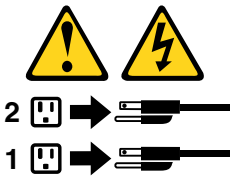


≥55 千克（121.2 磅）

警告：
抬起时请采取安全措施。



警告:
设备上的电源控制按钮和电源上的电源开关不会切断供给该设备的电流。该设备还可能有多条电源线。要切断该设备的所有电流，请确保所有电源线都与电源断开连接。





危險

電源、電話及通訊纜線上的電流都具有危險性。
若要避免觸電危險：
- 請勿在雷雨期間，連接或拔除纜線、執行安裝、維護或重新配置本產品。
- 將所有電源線連接到正確配線及接地的電源插座。
- 任何與本產品連接的設備都必須連接到配線妥當的電源插座。
- 請盡可能用單手連接或拔除信號線。
- 發生火災、水災或結構損害時，絕對不要開啟任何設備。
- 除非在安裝及配置程序中另有指示，否則在開啟裝置機蓋之前，請拔掉連接的電源線、電信系統、網路及數據機。
- 安裝、移動或開啟本產品或附屬裝置的機蓋時，請遵循下列說明連接及拔掉纜線。

連線	切斷連線
1. 關閉所有開關。 2. 首先，連接所有接線到裝置。 3. 連接信號線到接頭。 4. 連接電源線到插座。 5. 開啟裝置。	1. 關閉所有開關。 2. 首先，拔掉插座上的電源線。 3. 拔掉接頭上的信號線。 4. 拔掉裝置上所有接線。



警告：
更換鋰電池時，請僅使用產品編號 **45C1566** 或製造商所建議的同類型電池。
如果您的系統中含有鋰電池模組，請僅使用同一家製造商所生產的相同模組進行更換。
如果未以正確方式使用、處理或棄置含鋰的電池，會有爆炸的危險。
請勿：

- 沾溼或浸入水中
- 置於 **100°C (212°F)** 以上的高溫環境
- 修理或拆開

請按照各地區有關廢棄電池的法令和規定處理舊電池。



警告：
- 請勿移除機蓋。移除雷射產品的機蓋，可能會導致暴露在危險的雷射輻射中。裝置內部並無可自行維修的零件。
- 利用或執行非本文中所指定的控制、調整及執行程序，可能會導致危險的輻射外洩。



危險

部分雷射產品含有內嵌式 **Class 3A** 或 **Class 3B** 雷射二極體。請注意下列事項：
在開啟光碟機時，會發生雷射輻射。請勿直視光束或用光學儀器直接檢視，並避免直接暴露在光束中。

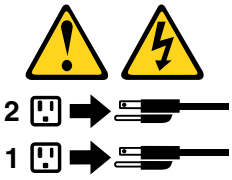




警告：
搬運時請注意安全。



警告：
裝置上的電源控制按鈕及電源供應器上的電源開關，無法關閉裝置所產生的電流。
該裝置可能有多條電源線。若要除去裝置流出的所有電流，請確認已切斷所有電源線的電源。





DANGER

Le courant électrique provenant de l'alimentation, du téléphone et des câbles de transmission peut présenter un danger.

Pour éviter tout risque de choc électrique :

- Ne manipulez aucun câble et n'effectuez aucune opération d'installation, d'entretien ou de reconfiguration de ce produit au cours d'un orage.
- Branchez tous les cordons d'alimentation sur un socle de prise de courant correctement câblé et mis à la terre.
- Branchez sur des socles de prise de courant correctement câblés tout équipement connecté à ce produit.
- Lorsque cela est possible, n'utilisez qu'une seule main pour connecter ou déconnecter les câbles d'interface.
- Ne mettez jamais un équipement sous tension en cas d'incendie ou d'inondation, ou en présence de dommages matériels.
- Avant de retirer les carters de l'unité, mettez celle-ci hors tension et déconnectez ses cordons d'alimentation, ainsi que les câbles qui la relient aux réseaux, aux systèmes de télécommunication et aux modems (sauf instruction contraire mentionnée dans les procédures d'installation et de configuration).
- Lorsque vous installez, que vous déplacez, ou que vous manipulez le présent produit ou des périphériques qui lui sont raccordés, reportez-vous aux instructions ci-dessous pour connecter et déconnecter les différents cordons.

Connexion	Déconnexion
1. Mettez les unités HORS TENSION. 2. Commencez par brancher tous les cordons sur les unités. 3. Branchez les câbles d'interface sur des connecteurs. 4. Branchez les cordons d'alimentation sur des prises. 5. Mettez les unités SOUS TENSION.	1. Mettez les unités HORS TENSION. 2. Débranchez les cordons d'alimentation des prises. 3. Débranchez les câbles d'interface des connecteurs. 4. Débranchez tous les câbles des unités.



ATTENTION:

Remplacer la pile au lithium usagée par une pile de référence identique exclusivement, (référence 45C1566), ou suivre les instructions du fabricant qui en définit les équivalences. Si votre système est doté d'un module contenant une pile au lithium, vous devez le remplacer uniquement par un module identique, produit par le même fabricant. La pile contient du lithium et peut exploser en cas de mauvaise utilisation, de mauvaise manipulation ou de mise au rebut inappropriée.

Ne pas :

- **la jeter à l'eau,**
- **l'exposer à des températures supérieures à 100°C,**
- **chercher à la réparer ou à la démonter.**

Ne pas mettre la pile à la poubelle. Pour la mise au rebut, se reporter à la réglementation en vigueur.



ATTENTION:

Si des produits à laser (tels que des unités de CD-ROM, de DVD-ROM, des unités à fibres optiques, ou des émetteurs) sont installés, prenez connaissance des informations suivantes :

- **Ne retirez pas le carter. En ouvrant l'unité de CD-ROM ou de DVD-ROM, vous vous exposez au rayonnement dangereux du laser. Aucune pièce de l'unité n'est réparable.**
- **Pour éviter tout risque d'exposition au rayon laser, respectez les consignes de réglage et d'utilisation des commandes, ainsi que les procédures décrites dans le présent manuel.**



DANGER

Certains produits à laser contiennent une diode à laser intégrée de classe 3A ou 3B. Prenez connaissance des informations suivantes:

Rayonnement laser lorsque le carter est ouvert. Evitez toute expositiondirecte au rayon laser. Evitez de regarder fixement le faisceau ou del'observer à l'aide d'instruments optiques.





≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

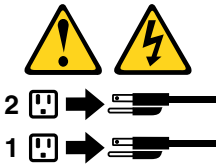
ATTENTION:

Soulevez la machine avec précaution.



ATTENTION:

L'interrupteur de contrôle d'alimentation de l'unité et l'interrupteur dubloc d'alimentation ne coupent pas le courant électrique alimentantl'unité. En outre, le système peut être équipé de plusieurs cordonsd'alimentation. Pour mettre l'unité hors tension, vous devez déconnectertous les cordons de la source d'alimentation.





VORSICHT

An Netz-, Telefon- und Datenleitungen können gefährliche Spannungen anliegen.

Aus Sicherheitsgründen:

- **Bei Gewitter an diesem Gerät keine Kabel anschließen oder lösen. Ferner keine Installations-, Wartungs- oder Rekonfigurationsarbeiten durchführen.**
- **Gerät nur an eine Schutzkontaktsteckdose mit ordnungsgemäß geerdetem Schutzkontakt anschließen.**
- **Alle angeschlossenen Geräte ebenfalls an Schutzkontaktsteckdosen mit ordnungsgemäß geerdetem Schutzkontakt anschließen.**
- **Die Signalkabel nach Möglichkeit einhändig anschließen oder lösen, um einen Stromschlag durch Berühren von Oberflächen mit unterschiedlichem elektrischem Potenzial zu vermeiden.**
- **Geräte niemals einschalten, wenn Hinweise auf Feuer, Wasser oder Gebäudeschäden vorliegen.**
- **Die Verbindung zu den angeschlossenen Netzkabeln, Telekommunikationssystemen, Netzwerken und Modems ist vor dem Öffnen des Gehäuses zu unterbrechen, sofern in den Installations- und Konfigurationsprozeduren keine anders lautenden Anweisungen enthalten sind.**
- **Zum Installieren, Transportieren und Öffnen der Abdeckungen des Computers oder der angeschlossenen Einheiten die Kabel gemäß der folgenden Tabelle anschließen und abziehen.**

Zum Anschließen der Kabel gehen Sie wie folgt vor	Zum Abziehen der Kabel gehen Sie wie folgt vor
1. Schalten Sie alle Einheiten AUS. 2. Schließen Sie erst alle Kabel an die Einheiten an. 3. Schließen Sie die Signalkabel an die Buchsen an. 4. Schließen Sie die Netzkabel an die Steckdose an. 5. Schalten Sie die Einheit EIN.	1. Schalten Sie alle Einheiten AUS. 2. Ziehen Sie zuerst alle Netzkabel aus den Netzsteckdosen. 3. Ziehen Sie die Signalkabel aus den Buchsen. 4. Ziehen Sie alle Kabel von den Einheiten ab.



CAUTION:

Eine verbrauchte Lithiumbatterie nur durch eine Batterie mit der Teilenummer 45C1566 oder eine gleichwertige, vom Hersteller empfohlene Batterie ersetzen. Enthält das System ein Modul mit einer Lithiumbatterie, dieses nur durch ein Modul desselben Typs und von demselben Hersteller ersetzen. Die Batterie enthält Lithium und kann bei unsachgemäßer Verwendung, Handhabung oder Entsorgung explodieren.

Die Batterie nicht:

- mit Wasser in Berührung bringen.
- über 100 C erhitzen.
- reparieren oder zerlegen.

Die örtlichen Bestimmungen für die Entsorgung von Sondermüll beachten.

ACHTUNG:

Bei der Installation von Lasergeräten (wie CD-ROM-Laufwerken, DVD- aufwerken, Einheiten mit Lichtwellenleitertechnik oder Sendern) Folgendes beachten:

- **Die Abdeckungen nicht entfernen. Durch Entfernen der Abdeckungen des Lasergeräts können gefährliche Laserstrahlungen freigesetzt werden. Das Gerät enthält keine zu wartenden Teile.**
- **Werden Steuerelemente, Einstellungen oder Durchführungen von Prozeduren anders als hier angegeben verwendet, kann gefährliche Laserstrahlung auftreten.**

VORSICHT

Einige Lasergeräte enthalten eine Laserdiode der Klasse 3A oder 3B. Beachten Sie Folgendes:

Laserstrahlung bei geöffneter Verkleidung. Nicht in den Strahl blicken. Keine Lupen oder Spiegel verwenden. Strahlungsbereich meiden.



≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

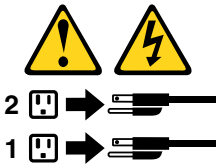
ACHTUNG:

Arbeitsschutzrichtlinien beim Anheben der Maschine beachten.



ACHTUNG:

Mit dem Netzschalter an der Einheit und am Netzteil wird die Stromversorgung für die Einheit nicht unterbrochen. Die Einheit kann auch mit mehreren Netzkabeln ausgestattet sein. Um die Stromversorgung für die Einheit vollständig zu unterbrechen, müssen alle zum Gerät führenden Netzkabel vom Netz getrennt werden.





סכנה

זרם חשמלי המועבר בכבלי חשמל, טלפון ותקשורת הוא מסוכן.

כדי להימנע מסכנת התחשמלות:

- אל תחברו או תנתקו כבלים, ואל תבצעו פעולת התקנה, תחזוקה או שינוי תצורה במוצר זה במהלך סופת ברקים.
- חברו את כל כבלי החשמל לשקע חשמל מחווט ומוארק כהלכה.
- חברו כל ציוד שיחובר למוצר זה לשקעי חשמל מחווטים כהלכה.
- במידת האפשר, השתמשו ביד אחת בלבד לחיבור או לניתוק של כבלי אותות.
- לעולם אל תפעילו ציוד כלשהו כאשר יש עדות לנזק מבני או לנזק כתוצאה מאש או ממים.
- נתקו את כבלי החשמל, מערכות התקשורת, התקני הרשת והמודמים המחוברים לפני פתיחת כיסויי ההתקן, אלא אם הליכי ההתקנה וקביעת התצורה מורים אחרת.
- בעת התקנה, העברה או פתיחת כיסויים במוצר זה או בהתקנים המחוברים, חברו ונתקו את הכבלים כמתואר בטבלה שלהלן.

כדי לחבר	כדי לנתק
1. כבו הכל. 2. ראשית, חברו את כל הכבלים להתקנים. 3. חברו את כבלי האותות למחברים. 4. חברו את כבלי החשמל לשקעים. 5. הפעילו את ההתקן.	1. כבו הכל. 2. ראשית, נתקו את כבלי החשמל מהשקעים. 3. נתקו את כבלי האותות מהמחברים. 4. הסירו את כל הכבלים מההתקנים.



זהירות:
בעת החלפת סוללת הליתיום, השתמשו רק בסוללה בעלת מק"ט 45C1566 או בסוג תואם שהומלץ על ידי היצרן. אם המערכת כוללת מודול המכיל סוללת ליתיום, החליפו אותו רק במודול מאותו סוג ומתוצרת אותו יצרן. הסוללה מכילה ליתיום, ועלולה להתפוצץ אם לא משתמשים ומטפלים בה או משליכים אותה כיאות.

לעולם:

- אל תטבלו במים
- אל תחממו לטמפרטורה הגבוהה מ-100°C (212°F)
- אל תתקנו או תפרקו

השליכו את הסוללה כנדרש לפי התקנות והחוקים המקומיים.



זהירות:
בעת התקנת מוצרי לייזר (כגון כונני תקליטורים ו-DVD, התקני סיב אופטי או משדרים), שימו לב לאזהרות הבאות:

- אל תסירו את הכיסויים. הסרת הכיסויים של מוצר הלייזר עלולה לגרום לחשיפה לקרינת לייזר מסוכנת. אין חלקים ברי טיפול בתוך ההתקן.
- שינויים, שימוש בבקרות או ביצוע הליכים אחרים מאלה המתוארים כאן, עלולים לגרום לחשיפה לקרינה מסוכנת.



סכנה

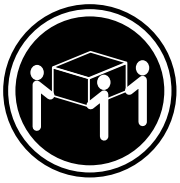
מוצרי לייזר מסוימים מכילים דיודת לייזר מסוג Class 3A או Class 3B. שימו לב לאזהרה הבאה:

כאשר הוא פתוח, המוצר פולט קרינת לייזר. אל תביטו ישירות בקרן, אל תביטו ישירות בעזרת ציוד אופטי, והימענו מחשיפה לקרן.

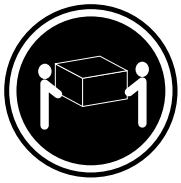




≥ 55 ק"ג (121.2 ליב')



≥ 32 ק"ג (70.5 ליב')

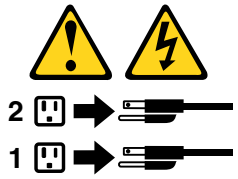


≥ 18 ק"ג (37 ליב')

זהירות:
השתמשו בהליכים
הנאותים בעת
הרמת הציוד.



זהירות:
לחצן ההפעלה של ההתקן ומתג ההפעלה של ספק החשמל אינם מפסיקים את זרם החשמל המסופק להתקן. בנוסף, ההתקן עשוי לכלול יותר מכבל חשמל אחד. כדי לסלק את כל הזרם החשמלי מההתקן, ודאו שכל כבלי החשמל מנותקים ממקור החשמל.





PERICOLO

La corrente elettrica proveniente dai cavi di alimentazione, del telefono e di comunicazione può essere pericolosa.

Per evitare il rischio di scosse elettriche:

- **Non collegare o scollegare qualsiasi cavo oppure effettuare l'installazione, la manutenzione o la riconfigurazione del prodotto durante un temporale.**
- **Collegare tutti i fili elettrici a una presa di alimentazione correttamente cablata e dotata di messa a terra.**
- **Collegare alle prese elettriche appropriate tutte le apparecchiature che verranno utilizzate per questo prodotto.**
- **Se possibile, utilizzare solo una mano per collegare o scollegare i cavi di segnale.**
- **Non accendere assolutamente apparecchiature in presenza di incendi, perdite d'acqua o danno strutturale.**
- **Scollegare i cavi di alimentazione, i sistemi di telecomunicazione, le reti e il modem prima di aprire i coperchi del dispositivo, salvo istruzioni contrarie relative alle procedure di installazione e configurazione.**
- **Collegare e scollegare i cavi come descritto nella seguente tabella quando vengono effettuate operazioni di installazione, spostamento o apertura dei coperchi di questo prodotto o delle unità collegate.**

Per collegarsi	Per scollegarsi
1. SPEGNERE le apparecchiature. 2. Innanzitutto, collegare tutti i cavi alle unità. 3. Collegare i cavi di segnale ai connettori. 4. Collegare i cavi di alimentazione alla presa. 5. Accendere l'unità.	1. SPEGNERE le apparecchiature. 2. Innanzitutto, rimuovere i cavi di alimentazione dalla presa. 3. Rimuovere i cavi di segnale dai connettori. 4. Rimuovere tutti i cavi dalle unità.



ATTENZIONE:

Quando si sostituisce la batteria al litio, utilizzare solo il Numero parte 45C1566 o un tipo di batteria equivalente consigliato dal produttore. Se sul sistema è presente un modulo che contiene una batteria al litio, sostituirlo solo con un tipo di modulo dello stesso tipo della stessa casa di produzione. La batteria contiene litio e può esplodere se usata, maneggiata o smaltita in modo non corretto.

Non:

- **Gettare o immergere la batteria nell'acqua**
- **Riscaldarla ad una temperatura superiore ai 100 gradi C (212 gradi F)**
- **Smontarla, ricaricarla o tentare di ripararla**

Le batterie usate vanno smaltite in accordo alla normativa in vigore (DPR 915/82 e successive disposizioni e disposizioni locali).



ATTENZIONE:

Quando vengono installati prodotti laser (quali CD-ROM, unità DVD-ROM, unità a fibre ottiche o trasmittenti), tener presente quanto segue:

- **Non rimuovere gli sportelli. L'apertura di un'unità laser può determinare l'esposizione a radiazioni laser pericolose. All'interno dell'unità non vi sono parti su cui effettuare l'assistenza tecnica.**
- **L'utilizzo di controlli, regolazioni o l'esecuzione di procedure non descritti nel presente manuale possono provocare l'esposizione a radiazioni pericolose.**



PERICOLO

Alcune unità laser contengono un diodo laser di Classe 3A o Classe 3B. Tener presente quanto segue:

Aprendo l'unità vengono emesse radiazioni laser. Non fissare il fascio, non guardarlo direttamente con strumenti ottici ed evitare l'esposizione al fascio.





≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

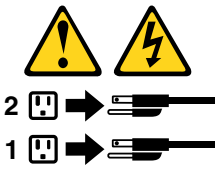
ATTENZIONE:

Prestare attenzione nel sollevare l'apparecchiatura.



ATTENZIONE:

Il pulsante di controllo dell'alimentazione presente sull'unità e l'interruttore dell'alimentatore non disattivano l'alimentazione corrente fornita all'unità. E' possibile che l'unità disponga di più cavi di alimentazione. Per disattivare l'alimentazione dall'unità, accertarsi che tutti i cavi di alimentazione siano scollegati dalla fonte di alimentazione.





위험

전원, 전화, 통신 케이블의 전류는 위험합니다.

감전의 위험을 피하려면 다음과 같이 하십시오.

- 번개가 치는 날에는 케이블을 연결 또는 분리하거나 본 제품을 설치, 보수, 재구성하지 마십시오.

- 모든 전원 코드는 올바르게 접지된 전기 콘센트에 연결하십시오.

- 본 제품에 연결될 장치는 올바르게 배선된 콘센트에 연결하십시오.

- 신호 케이블을 연결 또는 분리할 때 가능하면 한 손만을 사용하십시오.

- 불 또는 물로 인한 손상이나 구조적인 손상이 있을 경우 장치의 전원을 절대 켜지 마십시오.

- 설치 및 구성 과정에 별도의 지시 사항이 없는 경우, 장치의 덮개를 열기 전에 연결된 전원 코드, 원격 통신 시스템, 네트워크, 모뎀을 분리하십시오.

- 본 제품이나 연결된 장치를 설치, 이동하거나 덮개를 열 때 다음 표와 같은 순서로 케이블을 연결하거나 분리하십시오.

연결할 때:	분리할 때:
1. 모든 장치의 전원을 끄십시오. 2. 먼저 모든 케이블을 장치에 연결하십시오. 3. 커넥터에 신호 케이블을 연결하십시오. 4. 콘센트에 전원 코드를 연결하십시오. 5. 장치의 전원을 켜십시오.	1. 모든 장치의 전원을 끄십시오. 2. 먼저 콘센트에서 전원 코드를 분리하십시오. 3. 커넥터에서 신호 케이블을 분리하십시오. 4. 장치에서 모든 케이블을 분리하십시오.



주의:
배터리를 교환할 때는 Part Number 45C1566 또는 제조업체에서 지정한 동일한 종류의 제품을 사용하십시오. 사용자의 시스템이 리튬 배터리를 포함하는 모듈일 경우, 동일한 제조업체에서 동일한 모듈 유형으로 생산된 제품으로 교체하십시오. 배터리에는 리튬이 함유되어 있어 잘못 사용, 취급 또는 폐기할 경우 폭발의 위험이 있습니다.

사고를 방지하려면 다음 사항을 준수하십시오.

- 배터리를 물 속에 던지거나 침수시키지 마십시오.

- 100℃(212°F) 이상 가열하지 마십시오.

- 수리하거나 분해하지 마십시오.

배터리를 폐기할 때는 법령 또는 회사의 안전 수칙에 따라 폐기하십시오.



주의:
CD-ROM, DVD-ROM 장치, 광섬유 장치 또는 송신 장치와 같은 레이저 제품을 설치할 때, 다음과 같은 취급 주의사항을 참고하십시오.

- 덮개를 열지 마십시오. 덮개를 열면 레이저 복사 에너지에 노출될 위험이 있습니다. 장치 내부에는 사용자가 조정하거나 수리할 수 있는 부품이 없습니다.

- 규정된 것 이외의 절차 수행, 제어 조정 등의 행위로 인해 해로운 레이저 복사에 노출될 수 있습니다.



위험

일부 장비에는 임베디드 클래스 3A 또는 클래스 3B 레이저 다이오드가 있습니다. 다음 주의사항에 유의하십시오.

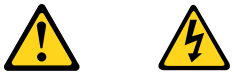
드라이브가 열리면 레이저 복사 에너지가 방출됩니다. 광선이 눈에 직접 쏘이지 않도록 하십시오. 나안 또는 광학 기구를 착용한 상태에서 광선을 직접 바라보지 않도록 하십시오.



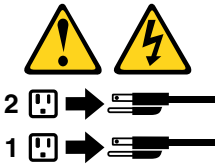


≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

주의:
제품을 들어 올릴 때
안전 규제를 따르십시오.



주의:
장치의 전원 제어 버튼 및 전원 공급 장치의 전원 스위치를 사용하여 장치에 공급되는 전기를 차단하지 마십시오. 장치는 둘 이상의 코드를 가지고 있을 수 있습니다. 장치에서 모든 전원을 차단하려면 콘센트에서 코드가 모두 분리되어 있는지 확인하십시오.





PELIGRO

La corriente eléctrica procedente de cables de alimentación, teléfonos y cables de comunicación puede ser peligrosa.

Para evitar el riesgo de descarga eléctrica:

- **No conecte ni desconecte los cables ni realice ninguna tarea de instalación, mantenimiento o reconfiguración de este producto durante una tormenta eléctrica.**
- **Conecte todos los cables de alimentación a tomas de corriente debidamente cableadas y conectadas a tierra.**
- **Cualquier equipo que se conecte a este producto también debe conectarse a tomas de corriente debidamente cableadas.**
- **Siempre que sea posible, utilice una sola mano para conectar o desconectar los cables de señal.**
- **No encienda nunca un equipo cuando hay señales de fuego, agua o daños estructurales.**
- **Desconecte los cables de alimentación, los sistemas de telecomunicaciones, las redes y los módems conectados antes de abrir las cubiertas de los dispositivos, a menos que se indique lo contrario en los procedimientos de instalación y configuración.**
- **Conecte y desconecte los cables, como se describe en la tabla siguiente, cuando instale, mueva o abra las cubiertas de este producto o de los dispositivos conectados.**

Para conectar	Para desconectar
1. APÁGUELO todo. 2. En primer lugar, conecte todos los cables a los dispositivos. 3. Conecte los cables de señal a los conectores. 4. Enchufe los cables de alimentación a las tomas de corriente. 5. Encienda el dispositivo.	1. APÁGUELO todo. 2. En primer lugar, desenchufe los cables de alimentación de las tomas de corriente. 3. Desconecte los cables de señal de los conectores. 4. Desconecte todos los cables de los dispositivos.



PRECAUCIÓN:

Cuando sustituya una batería de litio, utilice solamente una batería número de pieza 45C1566 u otra de tipo equivalente recomendada por el fabricante. Si su sistema dispone de un módulo que contiene una batería de litio, reemplácelo sólo con el mismo tipo de módulo, del mismo fabricante. La batería contiene litio y puede explotar si no se utiliza, manipula o desecha correctamente.

No debe:

- **Arrojarla al agua o sumergirla en ella**
- **Exponerla a temperaturas superiores a 100°C (212°F)**
- **Repararla o desmontarla**

Deshágase de la batería según especifiquen las leyes o normas locales.

PRECAUCIÓN:

Cuando haya productos láser (como unidades de CD-ROM, unidades de DVD, dispositivos de fibra óptica o transmisores) instalados, tenga en cuenta lo siguiente:

- **No quite las cubiertas. Si quita las cubiertas del producto láser, podría quedar expuesto a radiación láser peligrosa. Dentro del dispositivo no existe ninguna pieza que requiera servicio técnico.**
- **Si usa controles o ajustes o realiza procedimientos que no sean los especificados aquí, podría exponerse a radiaciones peligrosas.**

PELIGRO

Algunos productos láser tienen incorporado un diodo láser de clase 3A o clase 3B. Tenga en cuenta lo siguiente:

Cuando se abre, queda expuesto a radiación láser. No mire directamente al rayo láser, ni siquiera con instrumentos ópticos, y evite exponerse directamente al rayo láser.



≥18 kg (37 lbs)



≥32 kg (70.5 lbs)



≥55 kg (121.2 lbs)

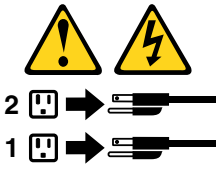
PRECAUCIÓN:

Adopte procedimientos seguros al levantar el equipo.



PRECAUCIÓN:

El botón de control de alimentación del dispositivo y el interruptor de alimentación de la fuente de alimentación no desconectan la corriente eléctrica suministrada al dispositivo. Además, el dispositivo podría tener más de un cable de alimentación. Para suprimir toda la corriente eléctrica del dispositivo, asegúrese de que todos los cables de alimentación estén desconectados de la toma de corriente.



Chapter 3. General information

This chapter provides general information that applies to all machine types supported by this manual.

Lenovo Welcome

The Lenovo Welcome program introduces some innovative built-in features of Lenovo to you and guides you through some important setup tasks to help you make the most of your computer.

Lenovo ThinkVantage Tools

The Lenovo ThinkVantage® Tools program guides you to a host of information sources and provides easy access to various tools to help you work more easily and securely.

Note: The Lenovo ThinkVantage Tools program is only available on computers with the Windows 7 operating system from Lenovo.

To access the Lenovo ThinkVantage Tools program, click **Start → All Programs → Lenovo ThinkVantage Tools**.

Lenovo Solution Center

The Lenovo Solution Center program enables you to troubleshoot and resolve computer problems. It combines diagnostic tests, system information collection, security status, and support information, along with hints and tips for maximum system performance. See “Lenovo Solution Center” on page 39 for detailed information.

SimpleTap

The SimpleTap program provides you with a quick way to customize some basic computer settings such as muting the speakers, adjusting the volume, locking the computer operating system, launching a program, opening a Web page, opening a file, and so on. You also can use the SimpleTap program to access the Lenovo App Shop, from which you can download various applications and computer software.

To start the SimpleTap program in a quick way, do any of the following:

- Click the red SimpleTap launch point on the desktop. The red launch point is available on the desktop after you have launched the SimpleTap program for the first time.
- Press the blue ThinkVantage button if your keyboard has one.

Note: The SimpleTap program is only available on certain models preinstalled with the Windows 7 operating system. If your Windows 7 model is not preinstalled with the SimpleTap program, you can download it from http://www.lenovo.com/support.

Lenovo ThinkVantage Toolbox

The Lenovo ThinkVantage Toolbox program helps you maintain your computer, improve computing security, diagnose computer problems, get familiar with the innovative technologies provided by Lenovo, and get more information about your computer. See “Lenovo ThinkVantage Toolbox” on page 39 for detailed information.

© Copyright Lenovo 2011, 2012

ThinkVantage Productivity Center

The ThinkVantage Productivity Center program contains information sources and tools designed to make computing easy and secure. It provides easy access to various technologies, such as:

- Client Security Solution
- Power Manager
- Productivity Center
- Product Recovery
- Rescue and Recovery
- System Update

Note: The ThinkVantage Productivity Center program is only available on computers preinstalled with the Windows Vista operating system from Lenovo.

To access the ThinkVantage Productivity Center program, click **Start → All Programs → ThinkVantage → Productivity Center**.

Additional information resources

If you have Internet access, the most up-to-date information for your computer is available at: http://www.lenovo.com/support

You can find the following information:
- Customer Replaceable Unit (CRU) installation or replacement instructions
- Downloads and drivers
- Parts information
- Publications
- Troubleshooting information
- Links to other useful sources of information

Specifications

This section lists the physical specifications for your computer.

For machine types: 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178.

Dimensions

Width: 175 mm (6.89 inches)

Height: 414 mm (16.30 inches)

Depth: 442 mm (17.40 inches)

Weight

Maximum configuration as shipped: 11 kg (24.25 lb)

Environment

- Air temperature:

  Operating: 10°C to 35°C (50°F to 95°F)

  Non-operating: -40°C to 60°C (-40°F to 140°F)

  Non-operating: -10°C to 60°C (14°F to 140°F) (without package)

- Humidity:
  - Operating: 20% to 80% (non-condensing)
  - Non-operating: 20% to 90% (non-condensing)
- Altitude:
  - Operating: -50 to 10 000 ft (-15.2 to 3 048 m)
  - Non-operating: -50 to 35 000 ft (-15.2 to 10 668 m)

Electrical input

- Input voltage:
  - Low range:
    - Minimum: 100 V ac
    - Maximum: 127 V ac
    - Input frequency range: 50 to 60 Hz
  - High range:
    - Minimum: 200 V ac
    - Maximum: 240 V ac
    - Input frequency range: 50 to 60 Hz

For machine types: 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177.

Dimensions

Width: 338 mm (13.31 inches)

Height: 99.7 mm (3.93 inches)

Depth: 385.4 mm (15.17 inches)

Weight

Maximum configuration as shipped: 7.5 kg (16.53 lb)

Environment

- Air temperature:
  - Operating: 10°C to 35°C (50°F to 95°F)
  - Non-operating: -40°C to 60°C (-40°F to 140°F)
  - Non-operating: -10°C to 60°C (14°F to 140°F) (without package)
- Humidity:
  - Operating: 20% to 80% (non-condensing)
  - Non-operating: 20% to 90% (non-condensing)
- Altitude:
  - Operating: -50 to 10 000 ft (-15.2 to 3 048 m)
  - Non-operating: -50 to 35 000 ft (-15.2 to 10 668 m)

Electrical input

- Input voltage:
  - Low range:
    - Minimum: 100 V ac
    - Maximum: 127 V ac

Input frequency range: 50 to 60 Hz

– High range:

Minimum: 200 V ac

Maximum: 240 V ac

Input frequency range: 50 to 60 Hz

Chapter 4. General checkout

Attention

The drives in the computer you are servicing might have been rearranged or the drive startup sequence might have been changed. Be extremely careful during write operations such as copying, saving, or formatting. Data or programs can be overwritten if you select an incorrect drive.

General error messages appear if a problem or conflict is found by an application program, the operating system, or both. For the explanation of these messages, refer to the information supplied with that software package.

Before replacing a FRU, ensure that the latest level of BIOS is installed on the system. A down-level BIOS might cause false errors and unnecessary replacement of the system board. For more information on how to determine and obtain the latest level BIOS, see “BIOS levels” on page 475.

Use the following procedure to help determine the cause of a problem:

1. Power-off the computer and all external devices.
2. Check all cables and power cords.
3. Set all display controls to the middle position.
4. Power-on all external devices.
5. Power-on the computer.
   - Look for displayed error codes
   - Listen for beep codes
   - Look for readable instructions or a main menu on the display.

   If you *did not* receive the correct response, proceed to step 6.

   If you *do* receive the correct response, proceed to step 7.
6. Look at the following conditions and follow the instructions:
   - If you hear beep codes during POST, go to “Beep symptoms” on page 67.
   - If the computer displays a POST error, go to “POST error codes” on page 68.
   - If the computer hangs and no error is displayed, turn off the computer and the power. Then, turn the power and the computer back on, continue at step 7.
7. Run the Diagnostic programs. See Chapter 5 “Diagnostic programs” on page 39.
   - If you receive an error, replace the part that the diagnostic program calls out or go to “Diagnostic error codes” on page 49.
   - If the test stops and you cannot continue, replace the last device tested.

Problem determination tips

Due to the variety of hardware and software combinations that can be encountered, use the following information to assist you in problem determination. If possible, have this information available when requesting assistance from Service Support and Engineering functions.

- Machine type and model
- Processor or hard disk drive upgrades
- Failure symptom
  - Do diagnostics indicate a failure?
  - What, when, where, single, or multiple systems?

© Copyright Lenovo 2011, 2012

  - Is the failure repeatable?
  - Has this configuration ever worked?
  - If it has been working, what changes were made prior to it failing?
  - Is this the original reported failure?
- Diagnostics version
  - Type and version level
- Hardware configuration
  - Print (print screen) configuration currently in use
  - BIOS level
- Operating system software
  - Type and version level

Note: To eliminate confusion, identical systems are considered identical only if they:

1. Are the exact machine type and models
2. Have the same BIOS level
3. Have the same adapters/attachments in the same locations
4. Have the same address jumpers/terminators/cabling
5. Have the same software versions and levels
6. Have the same diagnostic diskettes (version)
7. Have the same configuration options set in the system
8. Have the same setup for operating-system-controlled files

Comparing the configuration and software set-up between “working and non-working” systems will often lead to problem resolution.

Chapter 5. Diagnostic programs

Diagnostic programs are used to test hardware components of your computer. Diagnostic programs can also report operating-system-controlled settings that interfere with the correct operation of your system. You can use the preinstalled diagnostic program to diagnose computer problems, if your computer is running in the Windows® operating system.

Notes:

1. Depending on the date when your computer was manufactured, your computer is preinstalled with either the Lenovo Solution Center program or the Lenovo ThinkVantage Toolbox program for diagnostic purposes. For more information about the Lenovo ThinkVantage Toolbox program, see “Lenovo ThinkVantage Toolbox” on page 39. For more information about the Lenovo Solution Center program, see “Lenovo Solution Center” on page 39.
2. You can also download the PC-Doctor for DOS diagnostic program from http://www.lenovo.com/support. See “PC-Doctor for DOS” on page 40 for detailed information.
3. If you are unable to isolate and repair the problem yourself after running the programs, save and print the log files created by the programs. You will need the log files when you speak to a Lenovo technical support representative.

Lenovo ThinkVantage Toolbox

The Lenovo ThinkVantage Toolbox program helps you maintain your computer, improve computing security, diagnose computer problems, get familiar with the innovative technologies provided by Lenovo, and get more information about your computer. You can use the diagnostics feature of the Lenovo ThinkVantage Toolbox program to test devices, diagnose computer problems, create bootable diagnostic media, update system drivers, and view system information.

- To run the Lenovo ThinkVantage Toolbox program on the Windows 7 operating system, click **Start → All Programs → Lenovo ThinkVantage Tools → System Health and Diagnostics**. Follow the instructions on the screen.
- To run the Lenovo ThinkVantage Toolbox program on the Windows Vista operating system, click **Start → All Programs → ThinkVantage → Lenovo ThinkVantage Toolbox**. Follow the instructions on the screen.

Follow the instructions on the screen. For additional information, refer to the Lenovo ThinkVantage Toolbox help system.

Lenovo Solution Center

The Lenovo Solution Center program enables you to troubleshoot and resolve computer problems. It combines diagnostic tests, system information collection, security status, and support information, along with hints and tips for maximum system performance.

Notes:

- The Lenovo Solution Center program is available only on models preinstalled with the Windows 7 operating system. If your Windows 7 model is not preinstalled with the program, you can download it from http://www.lenovo.com/diagnose.
- If you are using the Windows Vista or Windows XP operating system, go to http://www.lenovo.com/diagnose for the latest information on diagnostics for your computer.

© Copyright Lenovo 2011, 2012

To run the Lenovo Solution Center program on the Windows 7 operating system, click **Start → All Programs → Lenovo ThinkVantage Tools → System Health and Diagnostics**. Follow the instructions on the screen.

For additional information, refer to the Lenovo Solution Center help system.

Note: If you are unable to isolate and repair the problem yourself after running the program, save and print the log files created by the program. You will need the log files when you speak to a Lenovo technical support representative.

PC-Doctor for DOS

You can also download the latest version of the PC-Doctor for DOS diagnostic program from http://www.lenovo.com/support. The PC-Doctor for DOS diagnostic program runs independently of the Windows operating system. Use the PC-Doctor for DOS diagnostic program if you are unable to start the Windows operating system. You can run the PC-Doctor for DOS diagnostic program from a diagnostic disc that you created.

Creating a diagnostic disc

This section provides instructions on how to create a diagnostic disc.

To create a diagnostic disc, do the following:

1. Download a self-starting bootable disc image (known as an ISO image) of the diagnostic program from: http://www.lenovo.com/support
2. Use any disc burning software to create a diagnostic disc with the ISO image.

Running the diagnostic program from the diagnostic disc

This section provides instructions on how to run the diagnostic program from the diagnostic disc that you created.

To run the diagnostic program from the diagnostic disc that you created, do the following:

1. Make sure your computer is turned off.
2. Repeatedly press and release the F12 key when turning on the computer. When the **Startup Device Menu** opens, release the F12 key.
3. Insert the diagnostic disc into the optical drive.
4. Select the optical drive with the diagnostic disc as the startup device and press Enter. The diagnostic program opens.
5. Follow the instructions on the screen to run the desired diagnostic test. For additional help, press the F1 key.
6. Remove the diagnostic disc from the optical drive after completing the diagnostic test.

Navigating through the diagnostic programs

Use the cursor movement keys to navigate within the menus.

- The Enter key is used to select a menu item.
- The Esc key is used to back up to the previous menu.
- For online help, select F1.

Running tests

There are four ways to run the diagnostic tests.

- Using the cursor movement keys, highlight **Run Normal Test** or **Run Quick Test** from the Diagnostics menu and then press Enter. This automatically runs a pre-defined group of tests from each test category. **Run Normal Test** runs a more extensive set of tests than **Run Quick Test** does and takes longer to complete.
- Press F5 to automatically run all selected tests in all categories.
- From within a test category, press Ctrl-Enter to automatically run only the selected tests in that category.
- Using the cursor movement keys, highlight a single test within a test category, and then press Enter. This runs only that test.

Press Esc at any time to stop the testing process.

Test results (N/A, PASSED, FAILED, ABORTED) are displayed in the field beside the test description and in the test log. See “Viewing the test log” on page 42.

To select one or more tests, use the following procedure.

1. Open the corresponding test category.
2. Using the cursor movement keys, highlight the desired test.
3. Press the space bar. A selected test is marked by **>>**. Pressing the space bar again de-selects a test and removes the >>.
4. Repeat steps 2 and 3 above to select all desired tests.

Test results

Diagnostics test results produce the following error code format:

Function Code	Failure Type	DeviceID	Date	ChkDigits	Text

- **Function Code:**
  Represents the feature or function within the computer.
- **Failure Type:**
  Represents the type of error encountered.
- **DeviceID:**
  Contains the component's unit-ID that corresponds to a fixed disk drive, removable media drive, processor, specific RIMM, or a device on the PCI bus.
- **Date:**
  Contains the date when the diagnostic test was run. The date is retrieved from CMOS and displayed using the YYYYMMDD format.
- **ChkDigits:**
  Contains a 2-digit check-digit value to ensure the following:
  - Diagnostics were run on the specified date.
  - Diagnostics were run on the specified computer.
  - The diagnostic error code is recorded correctly.
- **Text:**
  Description of the error.

Note: See “Diagnostic error codes” on page 49 for error code listings.

Quick and Full erase - hard disk drive

The diagnostics program offers two hard disk drive format utilities:

- Quick Erase Hard Drive

- Full Erase Hard Drive

Quick Erase Hard Drive provides a DOS utility that performs the following:

- Destroys the Master Boot Record (MBR) on the hard disk drive.
- Destroys all copies of the FAT Table on all partitions (both the master and backup).
- Destroys the partition table.
- Provides messages that warn the user that this is a non-recoverable process.

Full Erase Hard Drive provides a DOS utility that performs the following:

- Performs all the steps in Quick Erase.
- Provides a DOS utility that writes random data to all sectors of the hard disk drive.
- Provides an estimate of time to completion along with a visual representation of completion status.
- Provides messages that warn the user about a non-recoverable process.

Important: Make sure that all data is backed up before using the Quick or Full Erase functions.

To select the Quick Erase Hard Drive or Full Erase Hard Drive utility, do the following:

1. 1. Select the UTILITY option on the toolbar and press Enter.
2. Select either the QUICK ERASE or FULL ERASE HARD DISK option and follow the instructions.

Viewing the test log

To view details of a failure or to view a list of test results, use the following procedure from any test category screen:

1. Press F3 to activate the log file.
2. Press F3 again to save the file to diskette or press F2 to print the file.

Chapter 6. Using the Setup Utility program

You can use the Setup Utility program to view and change the configuration settings of your computer, regardless of which operating system you are using. However, the operating system settings might override any similar settings in the Setup Utility program.

This chapter provides information about the following topics to help you use the Setup Utility program:

- "Starting the Setup Utility program" on page 43
- "Viewing or changing settings" on page 43
- "Using passwords" on page 43
- "Enabling or disabling a device" on page 45
- "Selecting a startup device" on page 46
- "Exiting the Setup Utility program" on page 47

Starting the Setup Utility program

To start the Setup Utility program, do the following:

1. Make sure your computer is turned off.
2. Repeatedly press and release the F1 key when turning on the computer. When you hear multiple beeps or see a logo screen, release the F1 key.

   Note: If a Power-On Password or an Administrator Password has been set, the Setup Utility program menu will not be displayed until you type the correct password. For more information, see "Using passwords" on page 43.

When the POST detects that the hard disk drive has been removed from your computer or the memory module size has decreased, an error message will be displayed when you start the computer and you will be prompted to do one of the following:

- Press F1 to enter the Setup Utility program.

  Note: After you enter the Setup Utility program, select **Save Changes and Exit** at the bottom of the screen. The error message will not be displayed again.
- Press F2 to bypass the error message and log in to the operating system.

Viewing or changing settings

The Setup Utility program menu lists various items about the system configuration. To view or change settings, start the Setup Utility program. See "Starting the Setup Utility program" on page 43. Then, follow the instructions on the screen.

You can use either the keyboard or the mouse to navigate through BIOS menu choices. The keys used to perform various tasks are displayed at the bottom of each screen.

Using passwords

By using the Setup Utility program, you can set passwords to prevent unauthorized access to your computer and data. The following types of passwords are available:

- Power-On Password

© Copyright Lenovo 2011, 2012

- Administrator Password
- Hard Disk Password

You do not have to set any passwords to use your computer. However, using passwords improves computing security. If you decide to set any passwords, read the following sections.

Password considerations

A password can be any combination of up to 64 alphabetic and numeric characters. For security reasons, it is recommended to use a strong password that cannot be easily compromised. To set a strong password, use the following guidelines:

- Have at least eight characters in length
- Contain at least one alphabetic character and one numeric character
- Setup Utility program and hard disk drive passwords are not case sensitive
- Not be your name or your user name
- Not be a common word or a common name
- Be significantly different from your previous passwords

Power-on password

When a Power-On Password is set, you are prompted to type a valid password each time the computer is turned on. The computer cannot be used until the valid password is typed in.

Administrator password

Setting an Administrator Password deters unauthorized users from changing configuration settings. If you are responsible for maintaining the configuration settings of several computers, you might want to set an Administrator Password.

When an Administrator Password is set, you are prompted to type a valid password each time you try to access the Setup Utility program. The Setup Utility program cannot be accessed until a valid password is typed in.

If both the Power-On Password and Administrator Password are set, you can type either password. However, you must use your Administrator Password to change any configuration settings.

Hard Disk Password

Setting a Hard Disk Password prevents unauthorized access to the data on the hard disk drive. When a Hard Disk Password is set, you are prompted to type a valid password each time you try to access the hard disk drive.

Notes:

- After you set a Hard Disk Password, your data on the hard disk drive is protected even if the hard disk drive is removed from one computer and installed in another.
- If the Hard Disk Password is forgotten, there is no way to reset the password or recover data from the hard disk drive.

Setting, changing, or deleting a password

To set, change, or delete a password, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 43.

2. From the Setup Utility program main menu, select **Security**.
3. Depending on the password type, select **Set Power-On Password**, **Set Administrator Password**, or **Hard Disk Password**.
4. Follow the instructions on the right side of the screen to set, change, or delete a password.

   Note: A password can be any combination of up to 64 alphabetic and numeric characters. For more information, see “Password considerations” on page 44.

Erasing lost or forgotten passwords (clearing CMOS)

This section provides instructions on how to erase lost or forgotten passwords, such as a user password.

To erase a lost or forgotten password, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. For machine types: 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177, to open the computer cover, see “Opening the computer cover” on page 121 and for machine types: 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178, to remove the computer cover , see “Removing the computer cover” on page 79
3. Locate the Clear CMOS /Recovery jumper on the system board. See “Locating parts on the system board” on page 77.
4. Move the jumper from the standard position (pin 1 and pin 2) to the maintenance position (pin 2 and pin 3).
5. Reinstall the computer cover and connect the power cord. For machine types: 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177, see “Completing the parts replacement” on page 160 and for machine types: 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178, see “Completing the parts replacement” on page 113
6. Turn on the computer and leave it on for approximately 10 seconds. Then, turn off the computer by holding the power switch for approximately five seconds.
7. Repeat step 1 through step 2.
8. Move the Clear CMOS /Recovery jumper back to the standard position (pin 1 and pin 2).
9. Reinstall the computer cover and connect the power cord. For machine types: 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177, see “Completing the parts replacement” on page 160 and for machine types: 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178, see “Completing the parts replacement” on page 113

Enabling or disabling a device

This section provides information on how to enable or disable user access to the following devices:

USB Setup	Use this option to enable or disable a USB connector. When a USB connector is disabled, the device connected to the USB connector cannot be used.
SATA Controller	When this feature is set to **Disable**, all devices connected to the SATA connectors (such as hard disk drives or the optical drive) are disabled and cannot be accessed.
External SATA Port	When this option is set to **Disable**, the device connected to the External SATA connector cannot be accessed.

To enable or disable a device, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 43.
2. From the Setup Utility program main menu, select **Devices**.
3. Depending on the device you want to enable or disable, do one of the following:
   - Select **USB Setup** to enable or disable a USB device.
   - Select **ATA Drive Setup** to enable or disable an internal or external SATA device.
4. Select the desired settings and press Enter.
5. Press F10 to save and exit the Setup Utility program. See “Exiting the Setup Utility program” on page 47.

Selecting a startup device

If your computer does not start up from a device such as the disc or hard disk drive as expected, do one of the following to select the startup device you want.

Selecting a temporary startup device

Use this procedure to select a temporary startup device.

Note: Not all discs and hard disk drives are bootable.

1. Turn off your computer.
2. Repeatedly press and release the F12 key when turning on the computer. When the Please select boot device window displays, release the F12 key.
3. Select the desired startup device and press Enter. The computer will start up from the device you selected.

Note: Selecting a startup device from the Please select boot device window does not permanently change the startup sequence.

Selecting or changing the startup device sequence

To view or permanently change the configured startup device sequence, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 43.
2. From the Setup Utility program main menu, select **Startup**.
3. Select the devices for the Primary Startup Sequence, the Automatic Startup Sequence, and the Error Startup Sequence. Read the information displayed on the right side of the screen.
4. Press F10 to save and exit the Setup Utility program. See “Exiting the Setup Utility program” on page 47.

Smart performance choices

You can adjust the acoustic and thermal performance of your computer through the **Smart Performance Choice** menu. Two choices are available:

- **Better Acoustic Performance** (default choice)
- **Better Thermal Performance**

By enabling **Better Acoustic Performance**, your computer will run with less noise at a normal thermal level. By enabling **Better Thermal Performance**, your computer will run at a better thermal level with normal acoustic performance.

To switch between better acoustic performance and better thermal performance, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 43.
2. From the Setup Utility program main menu, select **Power**.

3. Select **Smart Performance Choice**. The Smart Performance Choice window is displayed.
4. Select **Better Acoustic Performance** or **Better Thermal Performance** as desired.
5. Press F10 to save your setting and exit the Setup Utility program. See “Exiting the Setup Utility program” on page 47.

Exiting the Setup Utility program

After you finish viewing or changing settings, press Esc to return to the Setup Utility program main menu. You might have to press Esc several times. Do one of the following:

- If you want to save the new settings, press F10 to save and exit the Setup Utility program.
- If you do not want to save the settings, select **Exit → Discard Changes and Exit**.
- If you want to return to the default settings, press F9 to load the default settings.

Chapter 7. Symptom-to-FRU index

The Symptom-to-FRU index lists error symptoms and possible causes. The most likely cause is listed first. Always begin with the Chapter 4 “General checkout” on page 37. You can use this index to help you decide which FRUs are needed when servicing a computer. If you are unable to correct the problem using this index, go to “Undetermined problems” on page 71.

Notes:

1. If you have both an error message and an incorrect audio response, diagnose the error message first.
2. If you cannot run the diagnostic tests or you get a diagnostic error code when running a test, but did receive a POST error message, diagnose the POST error message first.
3. If you did not receive any error message, look for a description of your error symptoms in the first part of this index.

Hard disk drive boot error

A hard disk drive boot error (error codes 1962 and I999030X) can have the following causes.

Error	FRU/Action
The start-up drive is not in the boot sequence in configuration.	Check the configuration and ensure the start-up drive is in the boot sequence.
No operating system installed on the boot drive.	Install an operating system on the boot drive.
The boot sector on the start-up drive is corrupted.	The drive must be formatted. Do the following: 1. Attempt to back up the data on the failing hard disk drive. 2. Using the operating systems program, format the hard disk drive.
The drive is defective.	Replace the hard disk drive.

Power Supply Problems

If you suspect a power problem, use the following procedures.

Check/Verify	FRU/Action
Check the following for proper installation: • Power cord • On/Off switch connector • On/Off switch power supply connector • System board power supply connectors • Microprocessor(s) connection	Reseat connectors
Check the power cord for continuity.	Power cord
Check the power-on switch for continuity.	Power-on switch

Diagnostic error codes

Refer to the following diagnostic error codes when using the diagnostic tests. See “Running tests” on page 40 for the specific type for information about the diagnostic programs.

© Copyright Lenovo 2011, 2012

In the following index, *X* can represent any number.

Diagnostic Error Code	FRU/Action
000-000-XXX BIOS Test Passed	**No action**
000-002-XXX BIOS Timeout	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475. 2. System board
000-024-XXX BIOS Addressing test failure	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475. 2. System board
000-025-XXX BIOS Checksum Value error	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475. 2. System board
000-026-XXX FLASH data error	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475. 2. System board
000-027-XXX BIOS Configuration/Setup error	1. Run Setup 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. System board
000-034-XXX BIOS Buffer Allocation failure	1. Reboot the system 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. Run memory test 4. System board
000-035-XXX BIOS Reset Condition detected	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475. 2. System board
000-036-XXX BIOS Register error	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475. 2. System board
000-038-XXX BIOS Extension failure	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. Adapter card 3. System board
000-039-XXX BIOS DMI data error	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475. 2. System board
000-195-XXX BIOS Test aborted by user	Information only Re-start the test, if necessary
000-196-XXX BIOS test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file

Diagnostic Error Code	FRU/Action
000-197-XXX BIOS test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
000-198-XXX BIOS test aborted	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and retest. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
000-199-XXX BIOS test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test 3. Replace component under function test
000-250-XXX BIOS APM failure	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. System board
000-270-XXX BIOS ACPI failure	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. System board
001-000-XXX System Test Passed	No action
001-00X-XXX System Error	System board
001-01X-XXX System Error	System board
001-024-XXX System Addressing test failure	System board
001-025-XXX System Checksum Value error	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. System board
001-026-XXX System FLASH data error	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. System board
001-027-XXX System Configuration/Setup error	1. Run Setup 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. System board
001-032-XXX System Device Controller failure	System board
001-034-XXX System Device Buffer Allocation failure	1. Reboot the system 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. Run memory test 4. System board
001-035-XXX System Device Reset condition detected	System board
001-036-XXX System Register error	System board

Diagnostic Error Code	FRU/Action
001-038-XXX System Extension failure	1. Adapter card 2. System board
001-039-XXX System DMI data structure error	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. System board
001-040-XXX System IRQ failure	1. Power-off/on system and re-test 2. System board
001-041-XXX System DMA failure	1. Power-off/on system and re-test 2. System board
001-195-XXX System Test aborted by user	Information only Re-start the test, if necessary
001-196-XXX System test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
001-197-XXX System test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
001-198-XXX System test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and retest. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
001-199-XXX System test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test 3. Replace component under function test
001-250-XXX System ECC error	System board
001-254-XXX 001-255-XXX 001-256-XXX 001-257-XXX System DMA error	System board
001-260-XXX 001-264-XXX System IRQ error	System board
001-268-XXX System IRQ1 failure	1. Device on IRQ1 2. System board
001-269-XXX System IRQ2 failure	1. Device on IRQ2 2. System board
001-270-XXX System IRQ3 failure	1. Device on IRQ3 2. System board
001-271-XXX System IRQ4 failure	1. Device on IRQ4 2. System board
001-272-XXX System IRQ5 failure	1. Device on IRQ5 2. System board

Diagnostic Error Code	FRU/Action
001-273-XXX System IRQ6 (diskette drive) failure	1. Diskette Cable 2. Diskette drive 3. System board
001-274-XXX System IRQ7 failure	1. Device on IRQ7 2. System board
001-275-XXX System IRQ8 failure	1. Device on IRQ8 2. System board
001-276-XXX System IRQ9 failure	1. Device on IRQ9 2. System board
001-277-XXX System IRQ10 failure	1. Device on IRQ10 2. System board
001-278-XXX System IRQ11 failure	1. Device on IRQ11 2. System board
001-279-XXX System IRQ12 failure	1. Device on IRQ12 2. System board
001-280-XXX System IRQ13 failure	1. Device on IRQ13 2. System board
001-281-XXX System IRQ14 (hard disk drive) failure	1. Hard disk drive cable 2. Hard disk drive 3. System board
001-282-XXX System IRQ15 failure	1. Device on IRQ15 2. System board
001-286-XXX 001-287-XXX 001-288-XXX System Timer failure	System board
001-292-XXX System CMOS RAM error	1. Run Setup and re-test 2. System board
001-293-XXX System CMOS Battery	1. CMOS battery 2. System board
001-298-XXX System RTC date/time update failure	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. System board
001-299-XXX System RTC periodic interrupt failure	System board
001-300-XXX System RTC Alarm failure	System board
001-301-XXX System RTC Century byte error	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. System board
005-000-XXX Video Test Passed	No action
005-00X-XXX Video error	1. Video card, if installed 2. System board
005-010-XXX 005-011-XXX 005-012-XXX 005-013-XXX Video Signal failure	1. Video card, if installed 2. System board

Diagnostic Error Code	FRU/Action
005-016-XXX Video Simple Pattern test failure	1. Video Ram 2. Video card, if installed 3. System board
005-024-XXX Video Addressing test failure	1. Video card, if installed 2. System board
005-025-XXX Video Checksum Value error	1. Video card, if installed 2. System board
005-027-XXX Video Configuration/Setup error	1. Run Setup 2. Video drivers update 3. Video card, if installed 4. System board
005-031-XXX Video Device Cable failure	1. Video cable 2. Monitor 3. Video card, if installed 4. System board
005-032-XXX Video Device Controller failure	1. Video card, if installed 2. System board
005-036-XXX Video Register error	1. Video card, if installed 2. System board
005-038-XXX System BIOS extension failure	1. Video card, if installed 2. System board
005-040-XXX Video IRQ failure	1. Video card, if installed 2. System board
005-195-XXX Video Test aborted by user	Information only Re-start the test, if necessary
005-196-XXX Video test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
005-197-XXX Video test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component called out in warning statement 4. Replace the component under test
005-198-XXX Video test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
005-199-XXX Video test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test

Diagnostic Error Code	FRU/Action
005-2XX-XXX 005-3XX-XXX Video subsystem error	1. Video card, if installed 2. System board
006-000-XXX Diskette interface Test Passed	No action
006-0XX-XXX Diskette interface error	1. Diskette drive Cable 2. Diskette drive 3. System board
006-195-XXX Diskette interface Test aborted by user	Information only Re-start the test, if necessary
006-196-XXX Diskette interface test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
006-197-XXX Diskette interface test warning	1. If a component is called out, make sure it is connected and/or enabled 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
006-198-XXX Diskette interface test aborted	1. If a component is called out, make sure it is connected and/or enabled 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
006-199-XXX Diskette interface test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test 3. Replace component under function test
006-25X-XXX Diskette interface Error	1. Diskette drive cable 2. Diskette drive 3. System board
011-000-XXX Serial port Interface Test Passed	No action
011-001-XXX Serial port Presence	1. Remove external serial device, if present 2. Run setup, enable port 3. System board
011-002-XXX 011-003-XXX Serial port Timeout/Parity error	System board
011-013-XXX 011-014-XXX Serial port Control Signal/Loopback test failure	System board
011-015-XXX Serial port External Loopback failure	1. Wrap plug 2. System board
011-027-XXX Serial port Configuration/Setup error	1. Run Setup, enable port 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. System board
011-03X-XXX 011-04X-XXX Serial port failure	System board
011-195-XXX Serial port Test aborted by user	Information only Re-start the test, if necessary

Diagnostic Error Code	FRU/Action
011-196-XXX Serial port test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
011-197-XXX Serial port test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
011-198-XXX Serial port test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
011-199-XXX Serial port test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
011-2XX-XXX Serial port signal failure	1. External serial device 2. System board
014-000-XXX Parallel port Interface Test Passed	No action
014-001-XXX Parallel port Presence	1. Remove external parallel device, if present 2. Run setup, enable port 3. System board
014-002-XXX 014-003-XXX Parallel port Timeout/Parity error	System board
014-013-XXX 014-014-XXX Parallel port Control Signal/Loopback test failure	System board
014-015-XXX Parallel port External Loopback failure	1. Wrap plug 2. System board
014-027-XXX Parallel port Configuration/Setup error	1. Run Setup, enable port 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. System board
014-03X-XXX 014-04X-XXX Parallel port failure	System board
014-195-XXX Parallel port Test aborted by user	Information only Re-start the test, if necessary
014-196-XXX Parallel port test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file

Diagnostic Error Code	FRU/Action
014-197-XXX Parallel port test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
014-198-XXX Parallel port test aborted	1. If a component is called out, make sure it is connected and/or enabled 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
014-199-XXX Parallel port test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
014-2XX-XXX 014-3XX-XXX Parallel port failure	1. External parallel device 2. System board
015-000-XXX USB port Interface Test Passed	No action
015-001-XXX USB port Presence	1. Remove USB device(s) and re-test 2. System board
015-002-XXX USB port Timeout	1. Remove USB device(s) and re-test 2. System board
015-015-XXX USB port External Loopback failure	1. Remove USB device(s) and re-test 2. System board
015-027-XXX USB port Configuration/Setup error	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. System board
015-032-XXX USB port Device Controller failure	System board
015-034-XXX USB port buffer allocation failure	1. Reboot the system 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Run memory test 4. System board
015-035-XXX USB port Reset condition detected	1. Remove USB device(s) and re-test 2. System board
015-036-XXX USB port Register error	System board
015-040-XXX USB port IRQ failure	1. Run setup and check for conflicts 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. System board
015-195-XXX USB port Test aborted by user	Information only Re-start the test, if necessary

Diagnostic Error Code	FRU/Action
015-196-XXX USB port test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
015-197-XXX USB port test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
015-198-XXX USB port test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
015-199-XXX USB port test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
018-000-XXX PCI Card Test Passed	No action
018-0XX-XXX PCI Card Failure	1. Riser card, if installed 2. System board
018-195-XXX PCI Card Test aborted by user	1. PCI card 2. Information only Re-start the test, if necessary
018-196-XXX PCI Card test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
018-197-XXX PCI Card test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
018-198-XXX PCI Card test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
018-199-XXX PCI Card test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test

Diagnostic Error Code	FRU/Action
018-250-XXX PCI Card Services error	1. PCI card 2. Riser card, if installed 3. System board
020-000-XXX PCI Interface Test Passed	No action
020-0XX-XXX PCI Interface error	1. PCI card 2. Riser card, if installed 3. System board
020-195-XXX PCI Test aborted by user	Information only Re-start the test, if necessary
020-196-XXX PCI test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
020-197-XXX PCI test warning	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
020-198-XXX PCI test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
020-199-XXX PCI test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
020-262-XXXPCI system error	1. PCI card 2. Riser card, if installed 3. System board
025-000-XXXIDE interface Test Passed	No action
025-00X-XXX 025-01X-XXX IDE interface failure	1. IDE signal cable 2. Check power supply voltages 3. Reseat IDE signal cable 4. IDE device 5. System board
025-027-XXX IDE interface Configuration/Setup error	1. IDE signal cable 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. Reseat IDE signal cable 4. IDE device 5. System board

Diagnostic Error Code	FRU/Action
025-02X-XXX 025-03X-XXX 025-04X-XXX IDE Interface failure	1. IDE signal cable 2. Check power supply 3. Reseat IDE signal cable 4. IDE device 5. System board
025-195-XXX IDE interface Test aborted by user	Information onlyRe-start the test, if necessary
025-196-XXX IDE interface test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
025-197-XXX IDE interface test warning	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
025-198-XXX IDE interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
025-199-XXX IDE interface test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
030-000-XXX SCSI interface Test Passed	No action
030-00X-XXX 030-01X-XXX SCSI interface failure	1. SCSI signal cable 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-027-XXX SCSI interface Configuration/Setup error	1. SCSI signal cable 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-03X-XXX 030-04X-XXX SCSI interface error	1. SCSI signal cable 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-195-XXX SCSI interface Test aborted by user	Information only Re-start the test, if necessary

Diagnostic Error Code	FRU/Action
030-196-XXX SCSI interface test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
030-197-XXX SCSI interface test warning	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
030-198-XXX SCSI interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
030-199-XXX SCSI interface test failed, cause unknown	1. Go to “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
035-000-XXX RAID interface Test Passed	No action
035-0XX-XXX RAID interface Failure	1. RAID signal cable 2. RAID device 3. RAID adapter card, if installed 4. System board
035-195-XXX RAID interface Test aborted by user	Information only Re-start the test, if necessary
035-196-XXX RAID interface test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
035-197-XXX RAID interface test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
035-198-XXX RAID interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
035-199-XXX RAID interface test failed, cause unknown	1. See “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
071-000-XXX Audio port Interface Test Passed	No action

Diagnostic Error Code	FRU/Action
071-00X-XXX 071-01X-XXX 071-02X-XXX Audio port error	1. Run Setup 2. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 3. System board
071-03X-XXX Audio port failure	1. Speakers 2. Microphone 3. Audio card, if installed 4. System board
071-04X-XXX Audio port failure	1. Run Setup 2. Audio card, if installed 3. System board
071-195-XXX Audio port Test aborted by user	Information only Re-start the test, if necessary
071-196-XXX Audio port test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
071-197-XXX Audio port test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
071-198-XXX Audio port test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
071-199-XXX Audio port test failed, cause unknown	1. See “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
071-25X-XXX Audio port failure	1. Speakers 2. Audio card, if installed 3. System board
080-000-XXX Game Port interface Test Passed	No action
080-XXX-XXX Game Port interface Error	1. Remove the game port device and re-test the system
080-195-XXX Game Port interface Test aborted by user	Information only Re-start the test, if necessary
080-196-XXX Game Port interface test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file

Diagnostic Error Code	FRU/Action
080-197-XXX Game Port interface test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
080-198-XXX Game Port interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
080-199-XXX Game Port interface test failed, cause unknown	1. See “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
086-000-XXX Mouse Port interface Test Passed	No action
086-001-XXX Mouse Port interface Presence	1. Mouse 2. System board
086-032-XXX Mouse Port interface Device controller failure	1. Mouse 2. System board
086-035-XXX Mouse Port interface Reset	1. Mouse 2. System board
086-040-XXX Mouse Port interface IRQ failure	1. Run Setup 2. Mouse 3. System board
086-195-XXX Mouse Port interface Test aborted by user	Information only Re-start the test, if necessary
086-196-XXX Mouse Port interface test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
086-197-XXX Mouse Port interface test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
086-198-XXX Mouse Port interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71

Diagnostic Error Code	FRU/Action
086-199-XXX Mouse Port interface test failed, cause unknown	1. See “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
089-000-XXX Microprocessor Test Passed	No action
089-XXX-XXX Microprocessor failure	1. Microprocessor(s) 2. System board
089-195-XXX Microprocessor Test aborted by user	Information only Re-start the test, if necessary
089-196-XXX Microprocessor test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
089-197-XXX Microprocessor test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
089-198-XXX Microprocessor test aborted	1. Flash the system. See “Updating (flashing) the BIOS from a disc” on page 475 2. Go to “Undetermined problems” on page 71
089-199-XXX Microprocessor test failed, cause unknown	1. See “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
170-000-XXX Voltage Sensor(s) Test Passed	No action
170-0XX-XXX Voltage Sensor(s) failure	1. Flash system 2. System board
170-195-XXX Voltage Sensor(s) Test aborted by user	Information only Re-start the test, if necessary
170-196-XXX Voltage Sensor(s) test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
170-197-XXX Voltage Sensor(s) test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
170-198-XXX Voltage Sensor(s) test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71

Diagnostic Error Code	FRU/Action
170-199-XXX Voltage Sensor(s) test failed, cause unknown	1. See “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
170-250-XXX 170-251-XXX Voltage Sensor(s) Voltage limit error	1. Power supply 2. System board
170-254-XXX Voltage Sensor(s) Voltage Regulator Module error	1. Voltage Regulator Module (VRM) 2. Microprocessor 3. System board
175-000-XXX Thermal Sensor(s) Test Passed	No action
175-0XX-XXX Thermal Sensor(s) failure	1. Flash system 2. System board
175-195-XXX Thermal Sensor(s) Test aborted by user	Information only Re-start the test, if necessary
175-196-XXX Thermal Sensor(s) test halt, error threshold exceeded	1. Press F3 to review the log file 2. Re-start the test to reset the log file
175-197-XXX Thermal Sensor(s) test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 43 2. Re-run test 3. Replace the component that is called out in warning statement 4. Replace the component under test
175-198-XXX Thermal Sensor(s) test aborted	1. If a component is called out, make sure it is connected and/or enabled 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Go to “Undetermined problems” on page 71
175-199-XXX Thermal Sensor(s) test failed, cause unknown	1. See “Undetermined problems” on page 71 2. Flash the system and re-test. See “Updating (flashing) the BIOS from a disc” on page 475 3. Replace component under function test
175-250-XXX 175-251-XXX Thermal Sensor(s) limit error	1. Check fans 2. Check Power supply voltages 3. Microprocessor 4. System board
185-000-XXX Asset Security Test Passed	No action
185-XXX-XXX Asset Security failure	1. Flash system 2. System board
185-278-XXX Asset Security Chassis Intrusion	1. Assure Asset Security Enabled 2. C2 Cover Switch 3. System board
201-000-XXX System Memory Test Passed	No action

Diagnostic Error Code	FRU/Action
201-XXX-XXX System Memory error	1. Replace the memory module called out by the test 2. System board
202-000-XXX System Cache Test Passed	No action
202-XXX-XXX System Cache error	1. Cache, if removable 2. System board 3. Microprocessor
206-000-XXX Diskette Drive Test Passed	No action
206-XXX-XXX Diskette Drive error	1. Diskette Drive Cable 2. Check power supply voltages 3. Diskette drive 4. System board
215-000-XXX CD-ROM Drive Test Passed	No action
215-XXX-XXX CD-ROM Drive error	1. CD-ROM Drive Cable 2. Check power supply voltages 3. CD-ROM drive 4. System board
217-000-XXX Hard Disk Drive Test Passed	No action
217-25X-XXX 217-26X-XXX Hard Disk Drive (IDE) error	1. Hard Disk Drive Cable 2. Check power supply voltages 3. Reseat the hard disk drive cable 4. Hard Disk drive (IDE) 5. System board
217-28X-XXX 217-29X-XXX Hard Disk Drive (SCSI) error	1. Hard Disk Drive Cable 2. Check power supply voltages 3. Reseat the hard disk drive cable 4. Hard Disk drive (SCSI) 5. SCSI adapter card 6. System board
220-000-XXX Hi-Capacity Cartridge Drive Test Passed	No action
220-XXX-XXX Hi-Capacity Cartridge Drive error	1. Remove the Hi-Capacity Cartridge Drive and re-test the system
301-XXX-XXX Keyboard error	1. Keyboard 2. Check and test mouse 3. System board
301-000-XXX Keyboard Test Passed	No action
302-000-XXX Mouse Test Passed	No action
302-XXX-XXX Mouse error	1. Mouse 2. Check and test Keyboard 3. System board
303-000-XXX Joystick Test Passed	No action
303-XXX-XXX Joystick error	Remove the Joystick and re-test the system

Diagnostic Error Code	FRU/Action
305-000-XXX Monitor DDC Test Passed	No action
305-250-XXX Monitor DDC self test failure	1. Run Setup to enable DDC 2. Cable 3. Monitor 4. Video card 5. System board
415-000-XXX Modem Test Passed	No action
415-XXX-XXX Modem error	Remove the Modem and re-test the system

Beep symptoms

Beep symptoms are tones or a series of tones separated by pauses (intervals without sound) during POST.

The following tables describes beep symptoms.

Beep Symptom	FRU/Action
2 short beeps CMOS setting error	Perform the following actions in order. 1. Start the Setup Utility program and press F10 to Save and exit. See Chapter 6 “Using the Setup Utility program” on page 43. 2. Start the Setup Utility program and press F9 to load defaults and then press F10 to Save and exit. 3. Perform a Boot-block recovery. See “Recovering from a POST and BIOS update failure” on page 476.
1 long and 2 short beeps Monitor or video adapter card error	Perform the following actions in order. 1. Make sure the monitor is properly connected to the computer. 2. Replace the video adapter card (if present). 3. Replace the system board.
1 long and 9 short beeps BIOS ROM error	Perform the following actions in order. 1. Start the Setup Utility program and press F9 to load defaults and then press F10 to Save and exit. See Chapter 6 “Using the Setup Utility program” on page 43. 2. Perform a Boot-block recovery. See “Recovering from a POST and BIOS update failure” on page 476. 3. Replace the system board.
Continuous long beeps DRAM memory error	Perform the following actions in order. 1. Make sure the memory module(s) are properly seated in the connector(s). 2. Replace the memory module(s). 3. Replace the system board.

POST error codes

Each time you power-on the system, it performs a series of tests that check the operation of the system and some options. This series of tests is called the *Power-On Self-Test*, or *POST*. POST does the following operations.

- Checks some basic system-board operations
- Checks the memory operation
- Starts the video operation
- Verifies that the boot drive is working

If the POST detects a problem, an error message appears on the screen. A single problem can cause several error messages to appear. When you correct the cause of the first error message, the other error messages probably will not appear on the screen the next time you turn on the system.

POST Error Message	**Description/Action**
CMOS battery failed	The CMOS battery is no longer functional. Replace the battery.
CMOS checksum error - defaults loaded	Checksum of CMOS is incorrect. The computer loads the default configuration settings. This error might indicate that CMOS has become corrupt due to a weak CMOS battery.
CPU at nnnn	nnnn is the running speed of the microprocessor.
Press Esc to skip memory test	Pressing Esc skips the full memory test
HARD DISK INSTALL FAILURE	Cannot find or initialize the hard disk drive controller or the drive. Make sure the hard disk drive is correctly installed. If no hard disk drives are installed, make sure the hard disk drive selection in Setup is set to NONE.
Keyboard error or no keyboard present	Cannot initialize the keyboard. Make sure the keyboard is properly connected to the computer and that no keys are held pressed during POST. To purposely configure the computer without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. The BIOS then ignores the missing keyboard during POST.
Memory Test:	This message displays during a full memory test, counting down the memory areas being tested.
Memory test fail	If POST detects an error during memory testing, additional information appears. This information gives specifics about the type and location of the memory error.

POST Error Message	Description/Action
Press TAB to show POST screen	Pressing the TAB key permits the user to toggle between the default POST display screen and a custom POST display screen.
Error: Non-System disk or disk error Replace and press any key when ready	The BIOS was unable to find a suitable boot device. Make sure the boot drive is properly connected to the computer. Make sure you have bootable media.

Miscellaneous error messages

Message/Symptom	FRU/Action
Changing display colors	Display/Monitor
Computer will *not* power-off. See “Hard disk drive boot error” on page 49.	1. Power Switch 2. System Board 3. Riser card, if installed
Computer will *not* RPL from server	1. Ensure that network is in startup sequence as first device or first device after diskette 2. Ensure that network adapter is enabled for RPL 3. Network adapter (Advise network administrator of new MAC address)
Computer will *not* perform a Wake on LAN® (if applicable)	1. Check power supply and signal cable connections to network adapter 2. Ensure that the operating system settings are set to enable Wake on LAN 3. Ensure Wake on LAN feature is enabled in Setup/Configuration (see “Starting the Setup Utility program” on page 43) 4. Ensure network administrator is using correct MAC address 5. Ensure no interrupt or I/O address conflicts 6. Network adapter (advise network administrator of new MAC address)
Dead computer. See “Hard disk drive boot error” on page 49.	1. Power Supply 2. System Board
Diskette drive in-use light remains on or does not light when drive is active.	1. Diskette Drive 2. System Board 3. Diskette Drive Cable
Flashing cursor with an otherwise blank display.	1. System Board 2. Primary Hard Disk Drive 3. Hard Disk Drive Cable
Incorrect memory size during POST	1. Run the Memory tests 2. Memory Module 3. System Board

Message/Symptom	FRU/Action
"Insert a Diskette" icon appears with a known-good diagnostics diskette in the first 3.5-inch diskette drive.	1. System Board 2. Diskette Drive Cable 3. Network Adapter
Intensity or color varies from left to right of characters and color bars	1. Display 2. Video adapter (if present) 3. System Board
No power or fan not running	1. See “Hard disk drive boot error” on page 49.
Non-system disk or disk error-type message with a known-good diagnostic diskette.	1. Diskette Drive 2. System Board 3. Diskette Drive Cable
Other display symptoms not listed above (including blank or illegible display)	1. Display 2. System Board
Power-on indicator or hard disk drive in-use light not on, but computer works correctly	1. Power switch/LED assembly 2. System Board
Printer problems	1. Printer 2. System Board
Program loads from the hard disk with a known-good diagnostics diskette in the first 3.5-inch diskette drive	1. Run Setup and check Startup sequence. 2. Diskette Drive 3. Diskette Drive Cable 4. System Board 5. Power Supply
RPL computer cannot access programs from its own hard disk.	1. If network administrator is using LCCM Hybrid RPL, check startup sequence: a. First device - network b. Second device - hard disk 2. Hard disk drive
RPL computer does not RPL from server	1. Check startup sequence 2. Check the network adapter LED status
Serial or parallel port device failure (system board port)	1. External Device Self-Test OK? 2. External Device 3. Cable 4. System Board
Serial or parallel port device failure (adapter port)	1. External Device Self-Test OK? 2. External Device 3. Cable 4. Alternate Adapter 5. System Board
Some or all keys on the keyboard do not work	1. Keyboard 2. Keyboard Cable 3. System Board

Undetermined problems

If you encounter undetermined problems, do the following:

1. Turn off the computer and the power.
2. Remove or disconnect the following components (if installed) one at a time.
   a. External devices (modem, printer, or mouse)
   b. Any adapter cards
   c. Memory modules
   d. Extended video memory
   e. External Cache
   f. External Cache RAM
   g. Hard disk drive
   h. Diskette drive
3. Turn on the power and the computer to re-test the system.
4. Repeat steps 1 through 3 until you find the failing device or adapter cards.

If all devices and adapter cards

have been removed, and the problem continues, replace the system board. See “Replacing the system board” on page 100 or “Replacing the system board” on page 150.

Chapter 8. Replacing FRUs (Machine Types: 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178.)

Important: Be sure to read and understand Chapter 2 “Safety information” on page 3 before you replace any FRU. These precautions and guidelines will help you work safely.

FRU replacements are to be done only by trained service technicians.

This chapter does not contain the remove or replace procedure for all FRUs. Only the major FRUs are documented.

Locations

This section provides information to help you locate your computer connectors, components, parts on the system board, and internal drives.

Note: The components in your computer might look slightly different from the illustrations.

© Copyright Lenovo 2011, 2012

Locating connectors, controls, and indicators on the front of your computer

Figure 1 “Front connector, control, and indicator locations” on page 74 shows the locations of the connectors, controls, and indicators on the front of your computer.

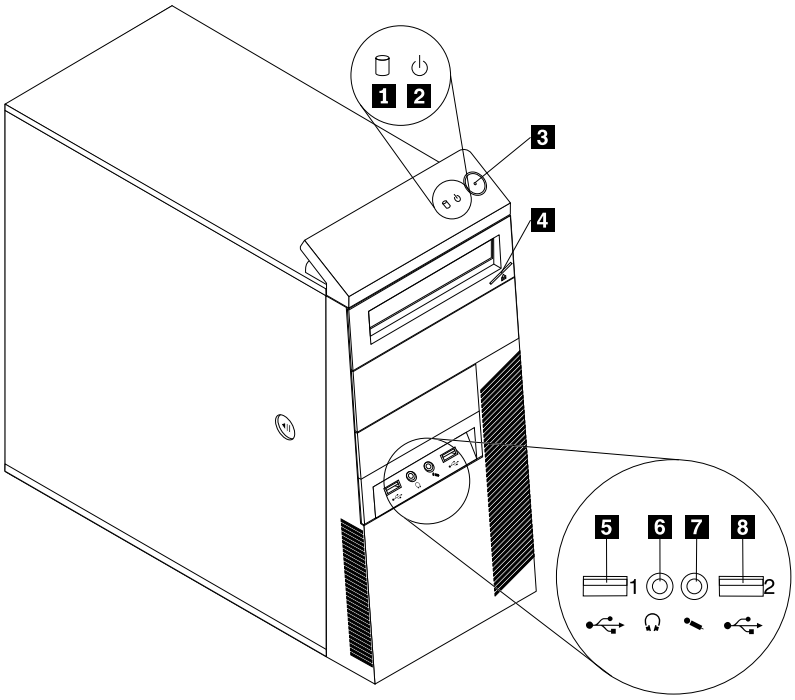


Figure 1. Front connector, control, and indicator locations

1 Hard disk drive activity indicator
2 Power indicator
3 Power switch
4 Optical drive eject/close button
5 USB connector (USB port 1)
6 Headphone connector
7 Microphone connector
8 USB connector (USB port 2)

Locating connectors on the rear of your computer

Figure 2 “Rear connector locations” on page 75 shows the locations of the connectors on the rear of your computer. Some connectors on the rear of your computer are color-coded to help you determine where to connect the cables on your computer.

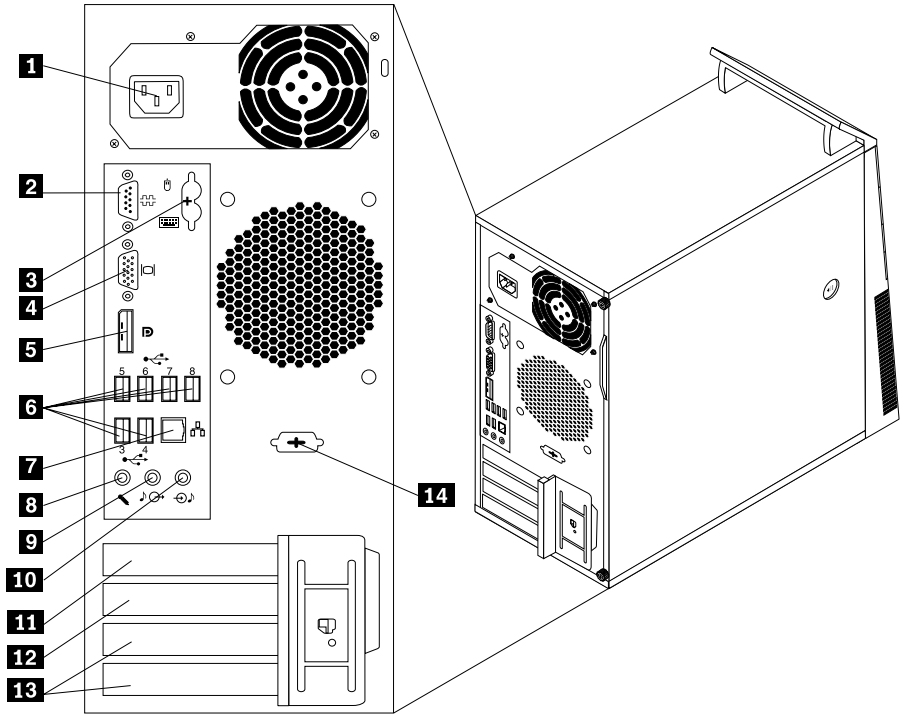


Figure 2. Rear connector locations

1 Power cord connector

2 Serial port (Serial port 1)

3 PS/2 keyboard and mouse connectors (optional)

4 VGA monitor connector

5 DisplayPort connector

6 USB connectors (USB ports 3 to 8)

7 Ethernet connector

8 Microphone connector

9 Audio line-out connector

10 Audio line-in connector

11 PCI Express x16 graphics card slot

12 PCI Express x1 card slot

13 PCI card slots (2)

14 Optional serial port (Serial port 2)

Locating components

Figure 3 “Component locations” on page 76 shows the locations of the various components in your computer. To remove the computer cover, see “Removing the computer cover” on page 79.

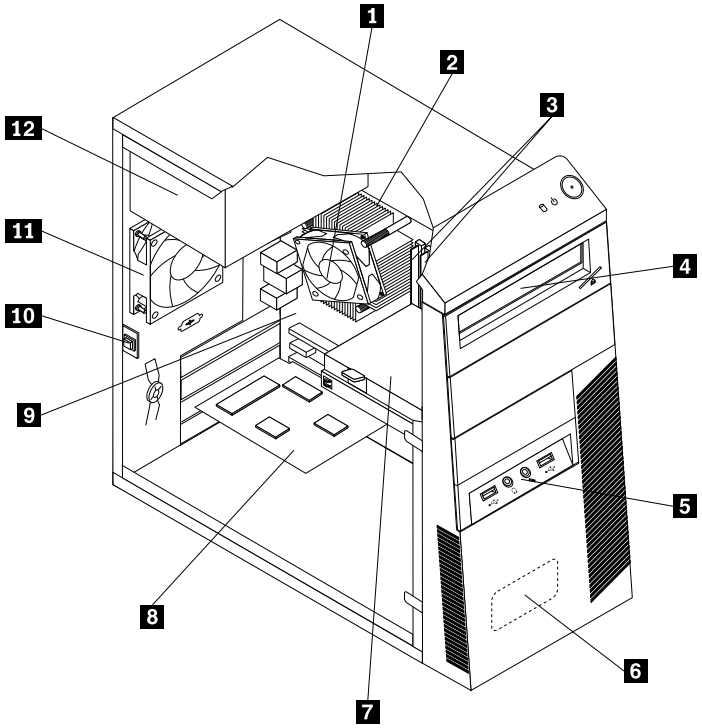


Figure 3. Component locations

1 Heat sink and fan assembly
2 Microprocessor
3 Memory modules
4 Optical drive
5 Front audio and USB assembly
6 Internal speaker (available on some models)
7 Hard disk drive
8 PCI card (installed in some models)
9 System board
10 Cover presence switch (also called intrusion switch)
11 Rear fan assembly
12 Power supply assembly

Locating parts on the system board

Figure 4 “System board parts locations” on page 77 shows the locations of the parts on the system board.

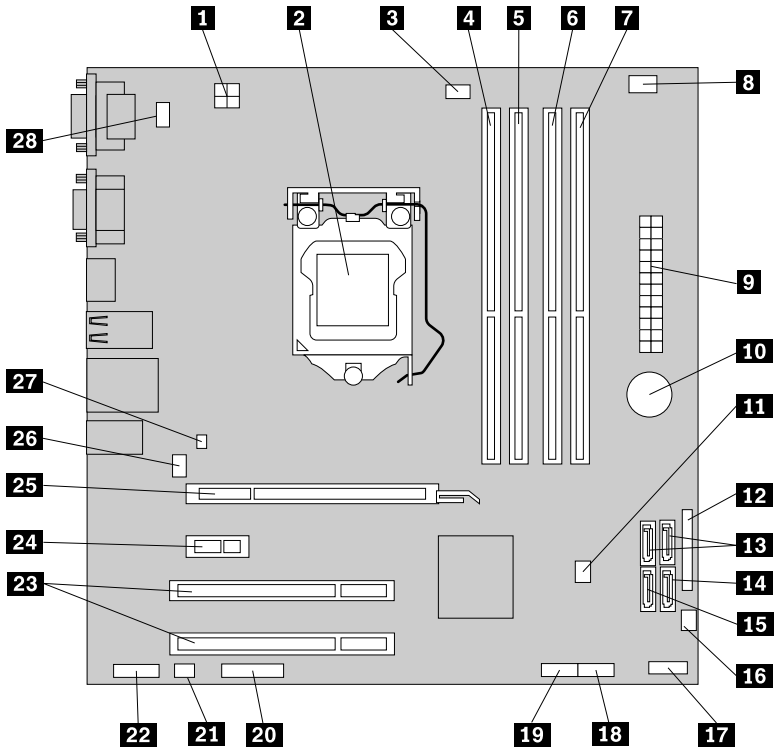


Figure 4. System board parts locations

1 4-pin power connector	15 eSATA connector
2 Microprocessor	16 Power fan connector
3 Microprocessor fan connector	17 Front panel connector (for connecting power switch and LED indicators)
4 Memory slot 1 (DIMM1)	18 Front USB connector 1 (for connecting USB port 1and 2 on the front bezel)
5 Memory slot 2 (DIMM2)	19 Front USB connector 2 (for connecting additional USB devices)
6 Memory slot 3 (DIMM3)	20 Serial (COM2) connector
7 Memory slot 4 (DIMM4)	21 Internal speaker connector
8 Thermal sensor connector	22 Front audio connector
9 24-pin power connector	23 PCI card slots (2)
10 Battery	24 PCI Express x1 card slot
11 Clear CMOS (Complementary Metal Oxide Semiconductor) /Recovery jumper	25 PCI Express x16 graphics card slot
12 Parallel connector	26 System fan connector
13 SATA connectors 1 and 2 (SATA 3.0 connectors)	27 Cover presence switch connector (Intrusion switch connector)
14 SATA connector 3 (SATA 2.0 connector)	28 PS/2 keyboard and mouse connector

Locating internal drives

Internal drives are devices that your computer uses to read and store data. You can add drives to your computer to increase storage capacity and enable your computer to read other types of media. Internal drives are installed in bays. In this manual, the bays are referred to as bay 1, bay 2, and so on.

When installing or replacing an internal drive, it is important to note the type and size of the drive that you can install or replace in each bay and correctly connect the cables to the drive installed. Refer to the appropriate section in “Installing or replacing hardware” on page 79 for instructions on how to install or replace internal drives for your computer.

Figure 5 “Drive bay locations” on page 78 shows the locations of the drive bays.

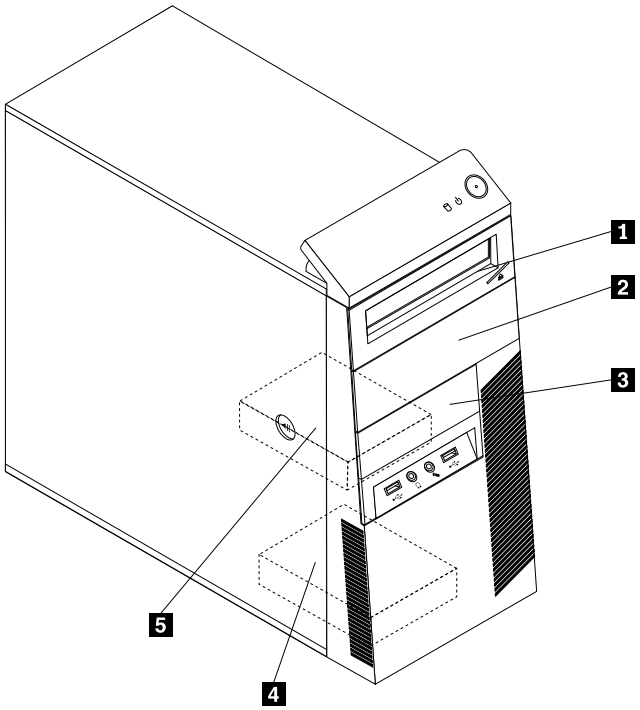


Figure 5. Drive bay locations

1 Bay 1 - Optical drive bay (with an optical drive installed on some models)

2 Bay 2 - Optical drive bay

3 Bay 3 - Card reader drive bay

4 Bay 4 - Secondary SATA hard disk drive bay

5 Bay 5 - Primary SATA hard disk drive bay (with a 3.5-inch SATA hard disk drive installed)

Handling static-sensitive devices

Do not open the static-protective package containing the new part until the defective part has been removed from the computer and you are ready to install the new part. Static electricity, although harmless to you, can seriously damage computer components and parts.

When you handle computer parts and components, take these precautions to avoid static-electricity damage:

- Limit your movement. Movement can cause static electricity to build up around you.
- Always carefully handle the parts and other computer components. Handle PCI cards, memory modules, system boards, and microprocessors by the edges. Never touch exposed circuitry.
- Prevent others from touching the parts and other computer components.
- Before you replace a new part, touch the static-protective package containing the new part to a metal expansion-slot cover or other unpainted metal surface on the computer for at least two seconds. This reduces static electricity from the package and your body.
- Remove the new part from the static-protective package and directly install it in the computer without placing it on any other surface. If it is hard for you to do this in your specific situation, place the static-protective package of the new part on a smooth, level surface, and then place the new part on the static-protective package.
- Do not place the part on the computer cover or other metal surface.

Installing or replacing hardware

This section provides instructions on how to install or replace hardware for your computer. You can expand the capabilities of your computer and maintain your computer by installing or replacing hardware.

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

Notes:

1. Use only computer parts provided by Lenovo.
2. When installing or replacing an option, use the appropriate instructions in this section along with the instructions that come with the option.

Removing the computer cover

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to remove the computer cover.

CAUTION:



Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To remove the computer cover, do the following:

1. Remove any media from the drives and turn off all attached devices and the computer.
2. Disconnect all power cords from electrical outlets.
3. Disconnect the power cords, Input/Output cables, and any other cables that are connected to the computer. See “Locating connectors, controls, and indicators on the front of your computer” on page 74 and “Locating connectors on the rear of your computer” on page 75.

4. Remove any locking device that secures the computer cover, such as a padlock or an integrated cable lock.
5. Remove any screws that secure the computer cover.
6. Press the cover-release button on the side of the computer and slide the cover to the rear of the computer to remove the cover.

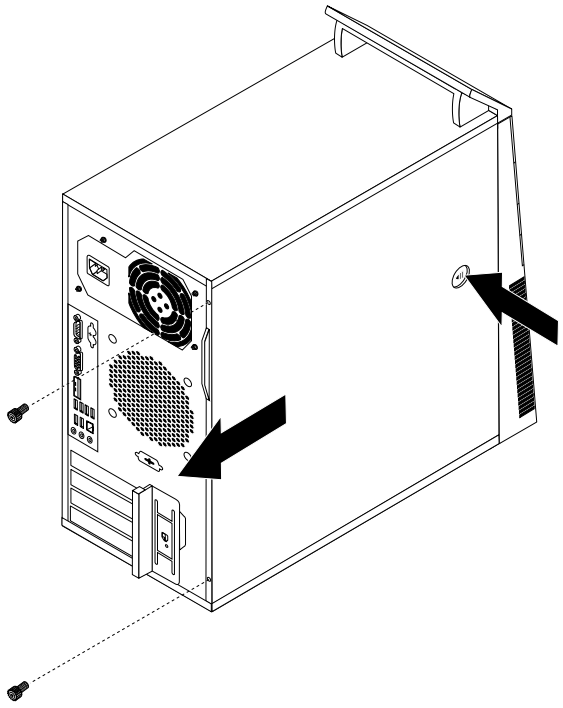


Figure 6. Removing the computer cover

Removing and reinstalling the front bezel

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to remove and reinstall the front bezel.

To remove and reinstall the front bezel, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.

3. Remove the front bezel by releasing the three plastic tabs on the left side and pivoting the front bezel outward.

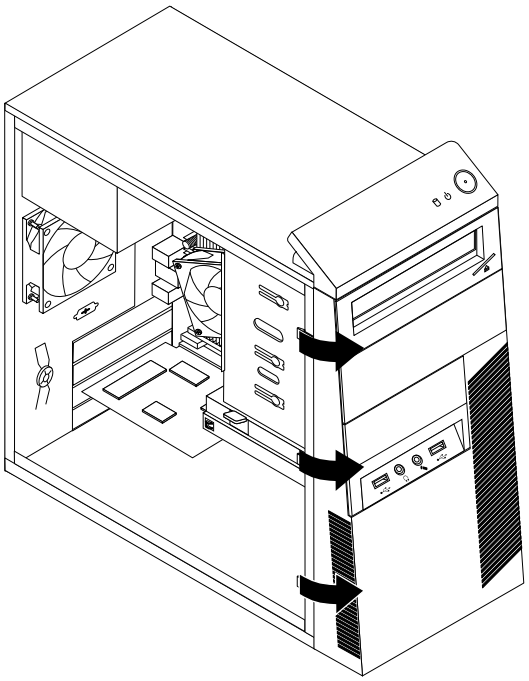


Figure 7. Removing the front bezel

4. To reinstall the front bezel, align the three plastic tabs on the right side of the front bezel with the corresponding holes in the chassis, then pivot the front bezel inwards until it snaps into position on the left side.

Installing or replacing a PCI card

Attention:
Do not open your computer or attempt any repair before reading and understanding the "Important safety information" in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to install or replace a PCI card. Your computer has two standard PCI card slots, one PCI Express x1 card slot, and one PCI Express x16 graphics card slot.

To install or replace a PCI card, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See "Removing the computer cover" on page 79.

3. At the rear of the computer, press the release button 1 to open the card latch 2.

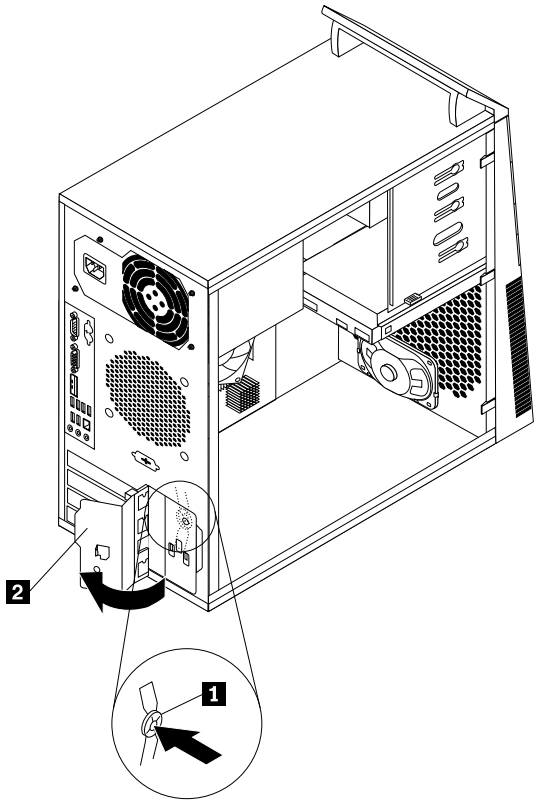


Figure 8. Opening the PCI card latch

4. Depending on whether you are installing or replacing a PCI card, do one of the following:
   - If you are installing a PCI card, remove the appropriate metal slot cover.
   - If you are replacing an old PCI card, grasp the old card that is currently installed and gently pull it out of the slot.

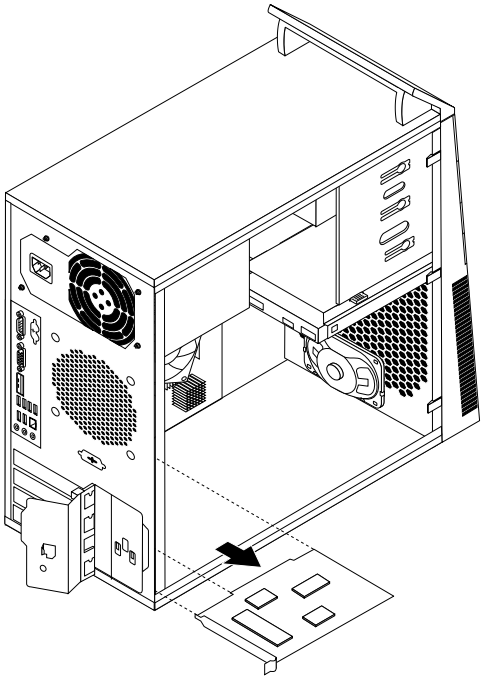
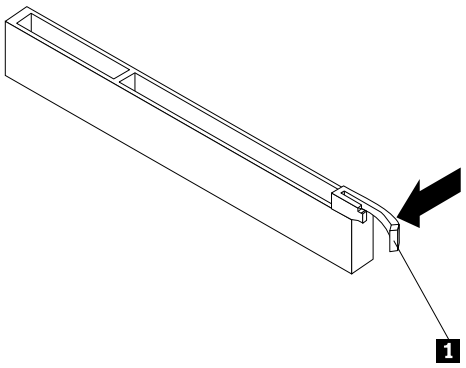


Figure 9. Removing a PCI card

Notes:

a. The card fits tightly into the card slot. If necessary, alternate moving each side of the card a small amount until it is removed from the card slot.

b. If the card is held in place by a retaining latch, press the card retaining latch **1** as shown to disengage the latch. Grasp the card and gently pull it out of the slot.



5. Remove the new PCI card from its static-protective package.
6. Install the new card into the appropriate slot on the system board. See “Locating parts on the system board” on page 77.

   Note: If you are installing a PCI Express x16 graphics card, make sure the memory slot retaining clips are closed before you install the graphics card.

7. Pivot the card latch to the closed position to secure the PCI card.

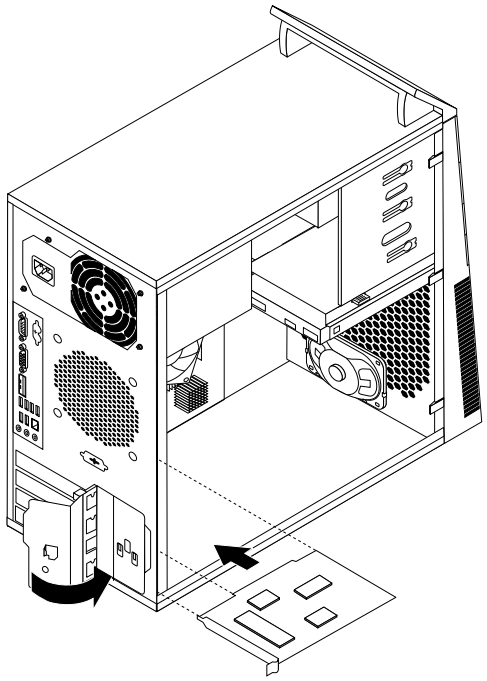


Figure 10. Installing a PCI card

8. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Installing or replacing a memory module

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to install or replace a memory module.

Your computer has four slots for installing or replacing DDR3 UDIMMs that provide up to a maximum of 32 GB system memory. When installing or replacing a memory module, use the following guidelines:

- Use 1 GB, 2 GB, 4 GB, or 8 GB DDR3 UDIMMs in any combination up to a maximum of 32 GB.
- Install memory modules in the sequence of DIMM 2, DIMM 4, DIMM 1, and DIMM 3. See “Locating parts on the system board” on page 77.

To install or replace a memory module, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Lay the computer on its side for easier access to the system board.
4. Locate the memory slots. See “Locating parts on the system board” on page 77.
5. Remove any parts that might prevent your access to the memory slots. Depending on your computer model, you might need to remove the PCI Express x16 graphics card for easier access to the memory slots. See “Installing or replacing a PCI card” on page 81.
6. Depending on whether you are installing or replacing a memory module, do one of the following:

- If you are replacing an old memory module, open the retaining clips and gently pull the memory module out of the memory slot.

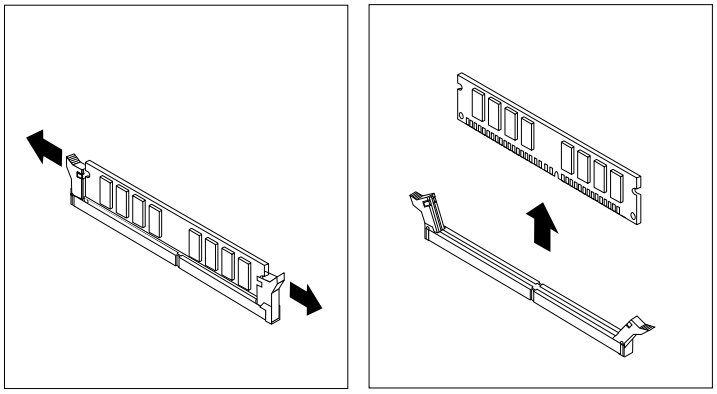


Figure 11. Removing a memory module

- If you are installing a memory module, open the retaining clips of the memory slot into which you want to install the memory module.

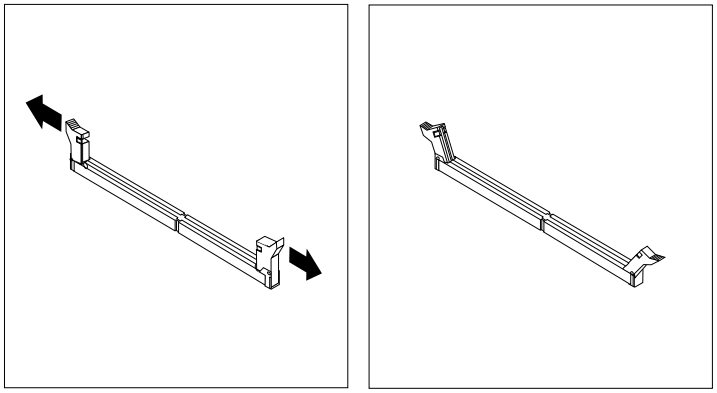


Figure 12. Opening the retaining clips

7. Position the new memory module over the memory slot. Make sure that the notch 1 on the memory module aligns correctly with the slot key 2 on the system board. Push the memory module straight down into the slot until the retaining clips close.

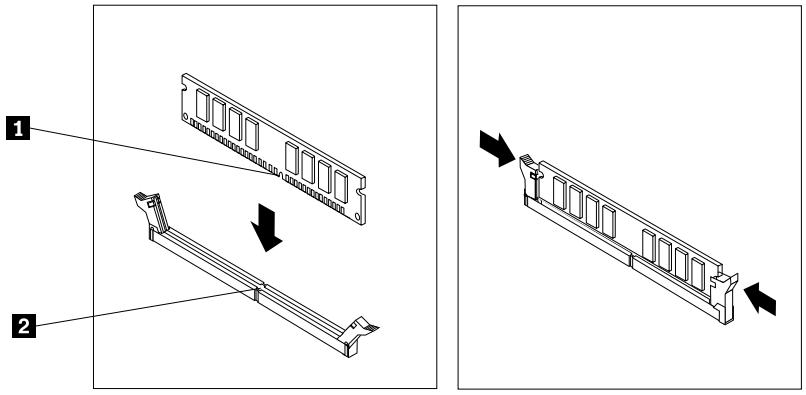


Figure 13. Installing a memory module

8. Reinstall the PCI Express x16 graphics card if you have removed it.
9. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Installing or replacing the optical drive

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to install or replace the optical drive.

To install or replace an optical drive, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 80.
4. Depending on whether you are installing or replacing an optical drive, do one of the following:
   - If you are installing a secondary optical drive, remove the plastic panel in the front bezel for the drive bay you want to use. If there is a metal static shield installed in the drive bay, remove the metal static shield.

- If you are replacing an optical drive, disconnect the signal cable and the power cable from the rear of the optical drive, press the blue release button, and then slide the optical drive out of the front of the computer.

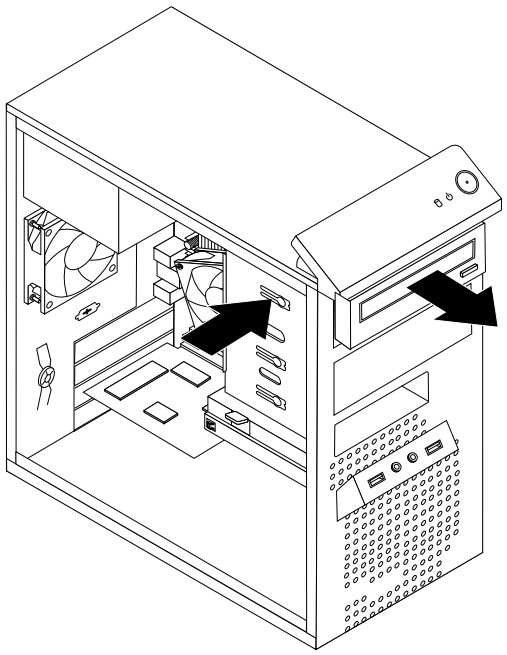


Figure 14. Removing the optical drive

5. Install the optical drive retainer on the side of the new optical drive.

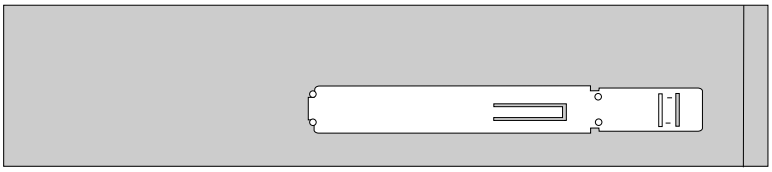


Figure 15. Installing the optical drive retainer

6. Slide the new optical drive into the drive bay from the front of the computer until the optical drive snaps into position.

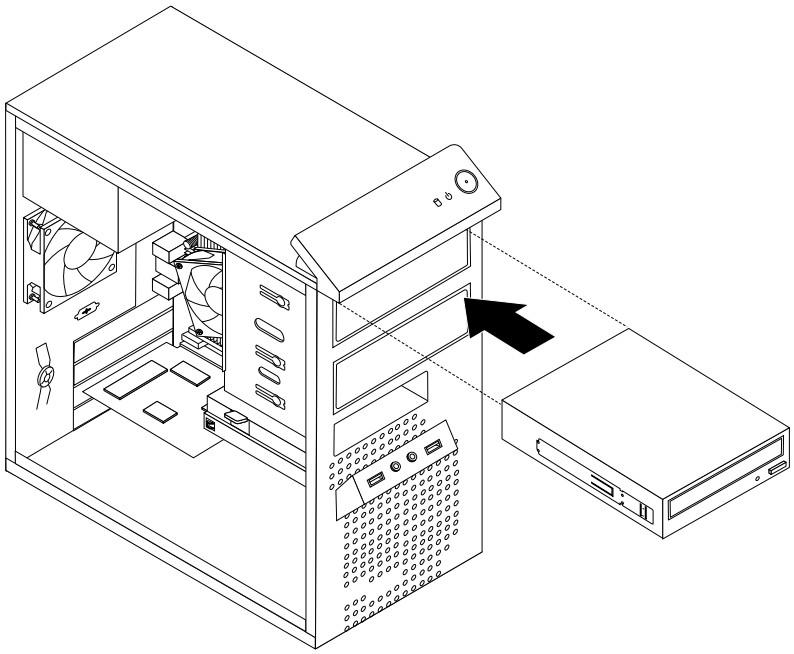


Figure 16. Installing the optical drive

7. Connect the signal cable and the power cable to the new optical drive.

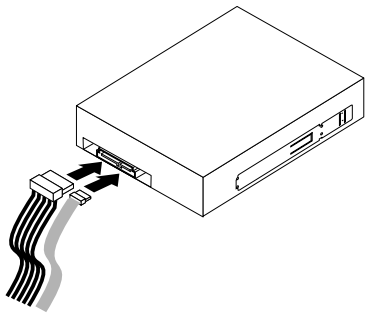


Figure 17. Connecting the optical drive

8. Reinstall the front bezel. See “Removing and reinstalling the front bezel” on page 80.
9. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Installing or replacing the card reader

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to install or replace the card reader.

Note: The card reader is only available in some models. For new installation, see “Installing the card reader” on page 89. For replacement, see “Replacing the card reader” on page 91.

Installing the card reader

To install the card reader, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 80.
4. Locate the card reader drive bay. See “Locating internal drives” on page 78.
5. Pivot the card reader retainer to the left and slide it out of the chassis.

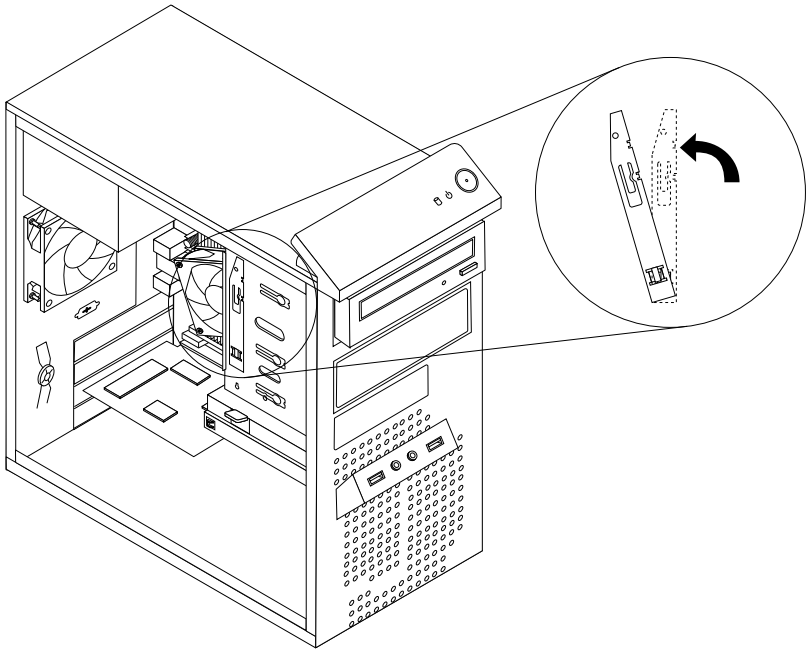


Figure 18. Removing the card reader retainer

6. Install the card reader retainer on the side of the new card reader.

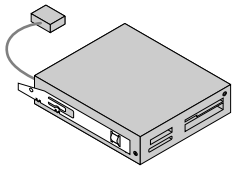


Figure 19. Installing the card reader retainer

7. Slide the card reader with retainer into the card reader drive bay until it snaps into position.

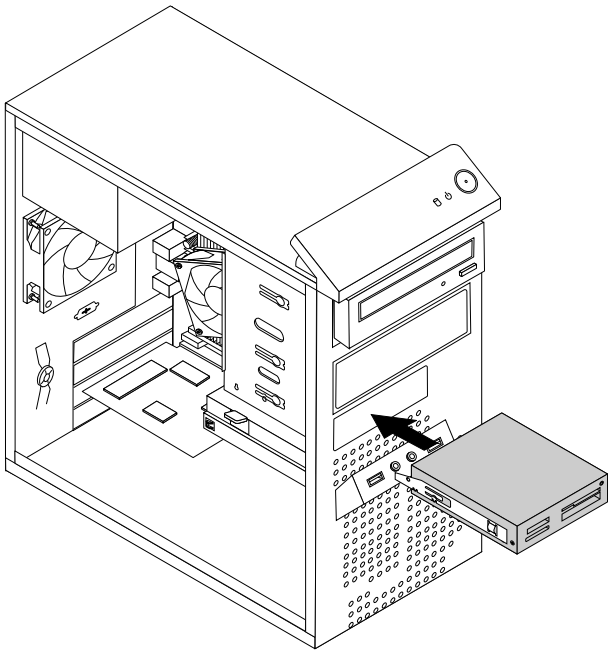


Figure 20. Installing the card reader

8. Connect the card reader cable to Front USB connector 2 on the system board. See “Locating parts on the system board” on page 77.
9. Reinstall the front bezel. See “Removing and reinstalling the front bezel” on page 80.

   Note: You might have to remove the card reader cover **2** from the front bezel. To remove the card read cover, pivot the two retaining clips **1** that secure the card reader cover outwards and then completely disengage the card reader cover from the front bezel.

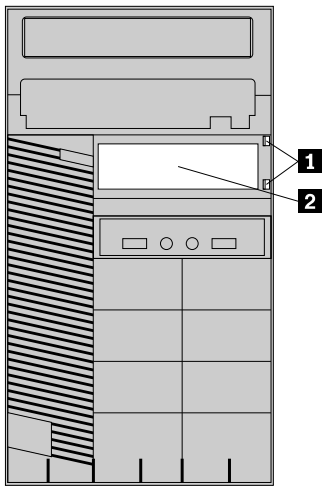


Figure 21. Removing the card reader cover

10. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the card reader

To replace the card reader, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 80.
4. Locate the card reader. See “Locating components” on page 76.
5. Disconnect the card reader cable from the USB connector on the system board. See “Locating parts on the system board” on page 77.
6. Press the blue retaining clip to remove the card reader out of the chassis.

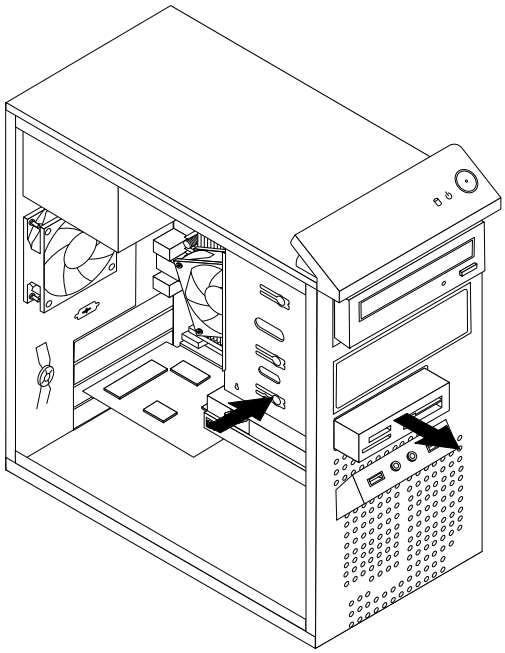


Figure 22. Removing the card reader

7. Install the card reader retainer on the side of the new card reader.

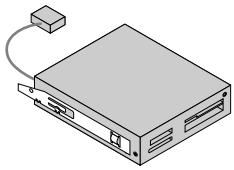


Figure 23. Installing the card reader retainer

8. Slide the new card reader into the drive bay until it snaps into position.

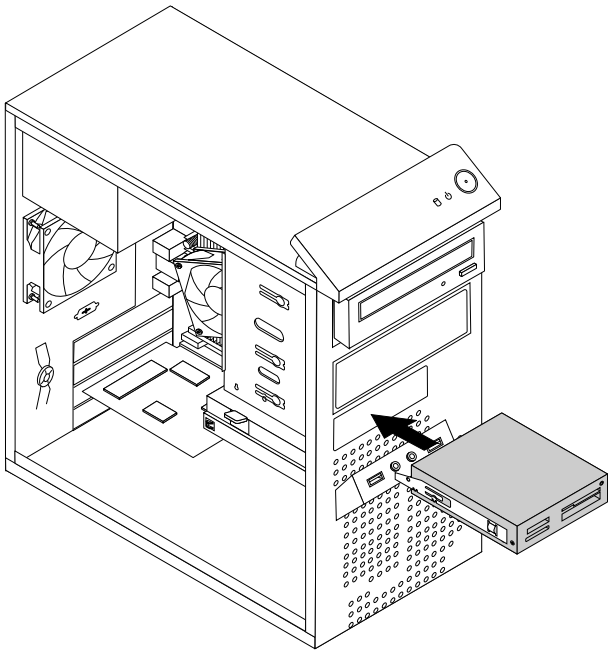


Figure 24. Installing the card reader

9. Reconnect the card reader cable to Front USB connector 2 on the system board. See “Locating parts on the system board” on page 77.
10. Reinstall the front bezel. See “Removing and reinstalling the front bezel” on page 80.
11. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the battery

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

Your computer has a special type of memory that maintains the date, time, and configuration information for built-in features. The battery keeps this information active when you turn off the computer.

The battery normally requires no charging or maintenance throughout its life; however, no battery lasts forever. If the battery fails, the date, time, and configuration information, including passwords, are lost. An error message is displayed when you turn on the computer.

Before performing the following procedure, be sure to read and understand the information about replacing and disposing of the battery in the “Batteries” and “Lithium battery notice” sections of the *ThinkCentre Safety and Warranty Guide*.

To replace the battery, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Remove the computer cover. See “Removing the computer cover” on page 79.

3. Locate the battery. See “Locating parts on the system board” on page 77.
4. Remove any parts and disconnect any cables that might prevent your access to the battery.
5. Remove the old battery.

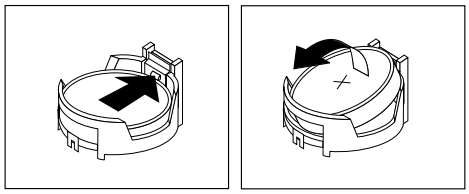


Figure 25. Removing the old battery

6. Install the new battery.

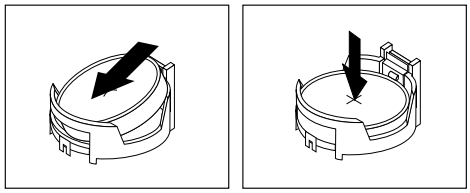


Figure 26. Installing the new battery

7. Reinstall any parts and reconnect any cables that have been removed or disconnected.
8. Reinstall the computer cover and reconnect all external cables. See “Completing the parts replacement” on page 113.
9. Turn on the computer and all attached devices.

   Note: When the computer is turned on for the first time after replacing the battery, an error message might be displayed. This is normal after replacing the battery.
10. Use the Setup Utility program to set the date, time, passwords, and any other configuration information. See Chapter 6 “Using the Setup Utility program” on page 43.

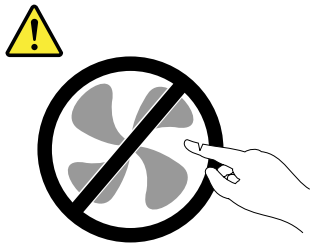
Replacing the power supply assembly

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the power supply assembly.

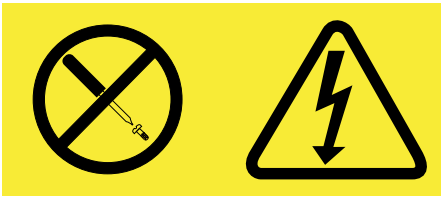
Although there are no moving parts in your computer after the power cord has been disconnected, the following warnings are required for your safety and proper Underwriters Laboratories (UL) certification.

DANGER



Hazardous moving parts. Keep fingers and other body parts away.

CAUTION:
Never remove the cover on a power supply or any part that has the following label attached.



Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

To replace the power supply assembly, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Disconnect the power supply assembly cables from the system board and all drives. See “Locating parts on the system board” on page 77.
4. Release the power supply assembly cables from the cable clips and ties in the chassis.

5. Lay the computer on its side and remove the four screws at the rear of the chassis that secure the power supply assembly.

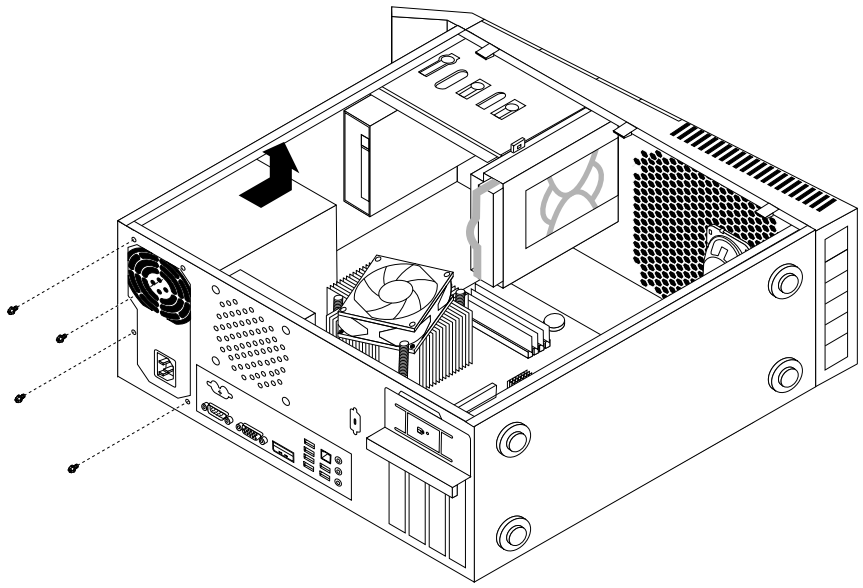


Figure 27. Removing the screws for the power supply assembly

6. Slide the power supply assembly to the front of the computer and then lift it out of the chassis.
7. Ensure that the new power supply assembly is the correct replacement.
8. Install the new power supply assembly into the chassis so that the screw holes in the power supply assembly align with those in the chassis.
9. Install and tighten the four screws to secure the power supply assembly.

   Note: Use only screws provided by Lenovo.
10. Reconnect the power supply assembly cables to the system board and each of the drives.
11. Secure the power supply assembly cables with the cable clips and ties in the chassis.
12. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the heat sink and fan assembly

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the heat sink and fan assembly.

CAUTION:



The heat sink and fan assembly might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To replace the heat sink and fan assembly, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.

2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Lay the computer on its side for easier access to the system board.
4. Locate the heat sink and fan assembly. See “Locating parts on the system board” on page 77.
5. Disconnect the heat sink and fan assembly cable from the microprocessor fan connector on the system board. See “Locating parts on the system board” on page 77.
6. Follow this sequence to remove the four screws that secure the heat sink and fan assembly to the system board:
   a. Partially remove screw 1, then fully remove screw 2, and then fully remove screw 1.
   b. Partially remove screw 3, then fully remove screw 4, and then fully remove screw 3.

   Note: Carefully remove the four screws from the system board to avoid any possible damage to the system board. The four screws cannot be removed from the heat sink and fan assembly.

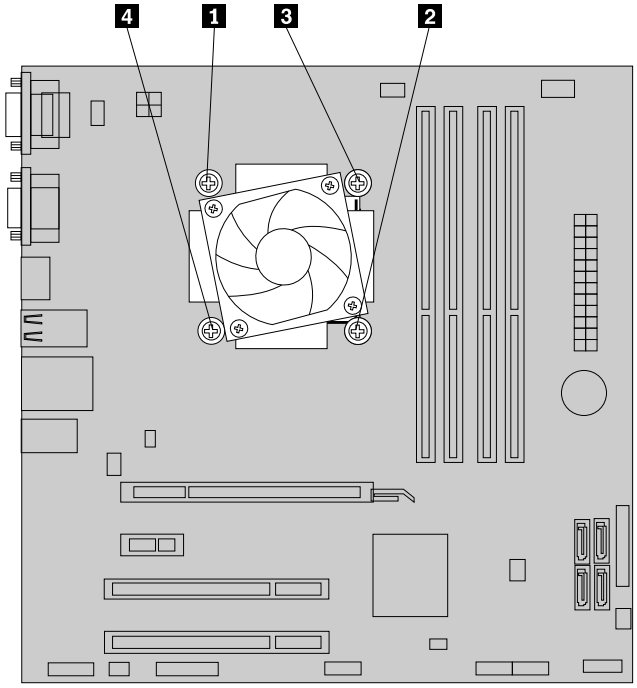


Figure 28. Removing the heat sink and fan assembly

7. Lift the failing heat sink and fan assembly off the system board.

   Notes:
   a. You might have to gently twist the heat sink and fan assembly to free it from the microprocessor.
   b. Do not touch the thermal grease while handling the heat sink and fan assembly.
8. Position the new heat sink and fan assembly on the system board so that the four screws are aligned with the holes on the system board.

   Note: Position the new heat sink and fan assembly so that the heat sink and fan assembly cable is toward the microprocessor fan connector on the system board.
9. Follow the following sequence to install the four screws to secure the new heat sink and fan assembly. Do not over-tighten the screws.
   a. Partially tighten screw 1, then fully tighten screw 2, and then fully tighten screw 1.
   b. Partially tighten screw 3, then fully tighten screw 4, and then fully tighten screw 3.

10. Connect the heat sink and fan assembly cable to the microprocessor fan connector on the system board. See “Locating parts on the system board” on page 77.
11. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the microprocessor

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the microprocessor.

CAUTION:



The heat sink and microprocessor might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To replace the microprocessor, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Lay the computer on its side for easier access to the system board.
4. Locate the system board and disconnect all cables connected to the system board. See “Locating parts on the system board” on page 77.
5. Remove the heat sink and fan assembly. See “Replacing the heat sink and fan assembly” on page 95.

   Note: Place the heat sink and fan assembly on its side so that the thermal grease on the bottom of it does not get in contact with anything.

6. Lift the small handle 1 and open the retainer 2 to access the microprocessor 3.

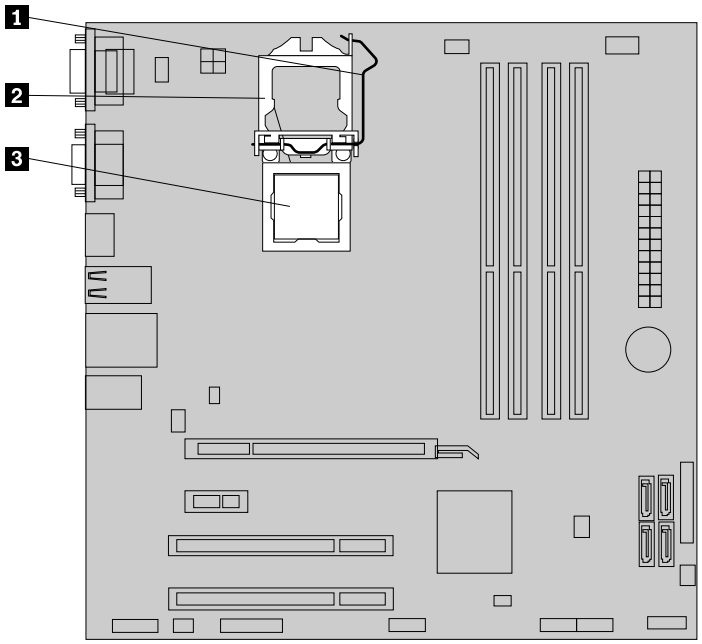


Figure 29. Accessing the microprocessor

7. Lift the microprocessor straight up and out of the microprocessor socket.

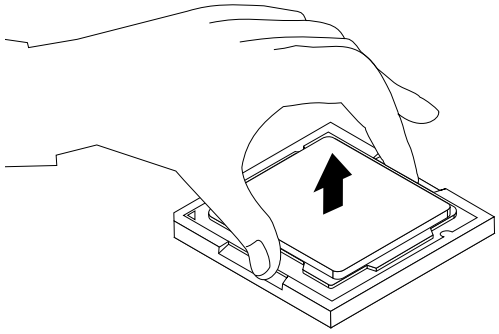
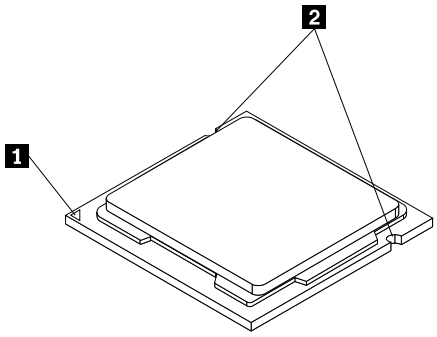


Figure 30. Removing the microprocessor

Notes:

a. Your microprocessor and socket might look different from the one illustrated.

b. Note the orientation of the microprocessor in the socket. You can either look for the small triangle 1 on one corner of the microprocessor or note the orientation of the notches 2 on the microprocessor. This is important when installing the new microprocessor on the system board.



c. Touch only the edges of the microprocessor. Do not touch the gold contacts on the bottom.

d. Do not drop anything onto the microprocessor socket while it is exposed. The socket pins must be kept as clean as possible.

8. Make sure that the small handle is in the raised position and the microprocessor retainer is fully open.
9. Remove the protective cover that protects the gold contacts of the new microprocessor.
10. Hold the new microprocessor by its sides and align the small triangle on one corner of the new microprocessor with the corresponding small triangle on one corner of the microprocessor socket.
11. Lower the new microprocessor straight down into the microprocessor socket on the system board.

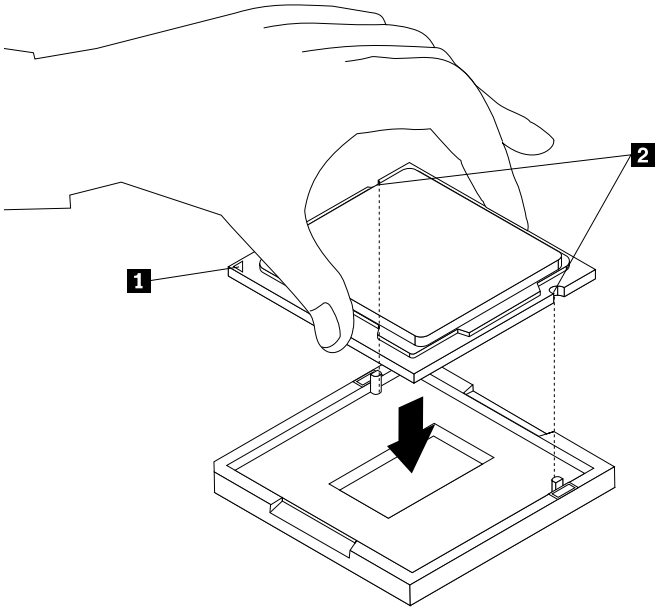


Figure 31. Installing the microprocessor

12. Close the microprocessor retainer and lock it into position with the small handle to secure the new microprocessor in the socket.
13. Reinstall the heat sink and fan assembly. See “Replacing the heat sink and fan assembly” on page 95.
14. Reconnect all cables that were disconnected from the system board.
15. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the system board

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to: http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the system board.

CAUTION:



The heat sink and microprocessor might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before opening the computer cover.

To replace the system board, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Lay the computer on its side for easier access to the system board.
4. Remove the hard disk drive from the chassis. See “Replacing the primary hard disk drive” on page 103. Remove the secondary hard disk drive if your model has one. See “Replacing the secondary hard disk drive” on page 105.
5. Remove all memory modules and PCI cards that are currently installed. See “Installing or replacing a memory module” on page 84 and “Installing or replacing a PCI card” on page 81.
6. Carefully take note of the location of all cable connections on the system board and disconnect all the cables. See “Locating parts on the system board” on page 77.
7. Remove the heat sink and fan assembly from the failing system board. See “Replacing the heat sink and fan assembly” on page 95.
8. Remove the eight screws that secure the system board.

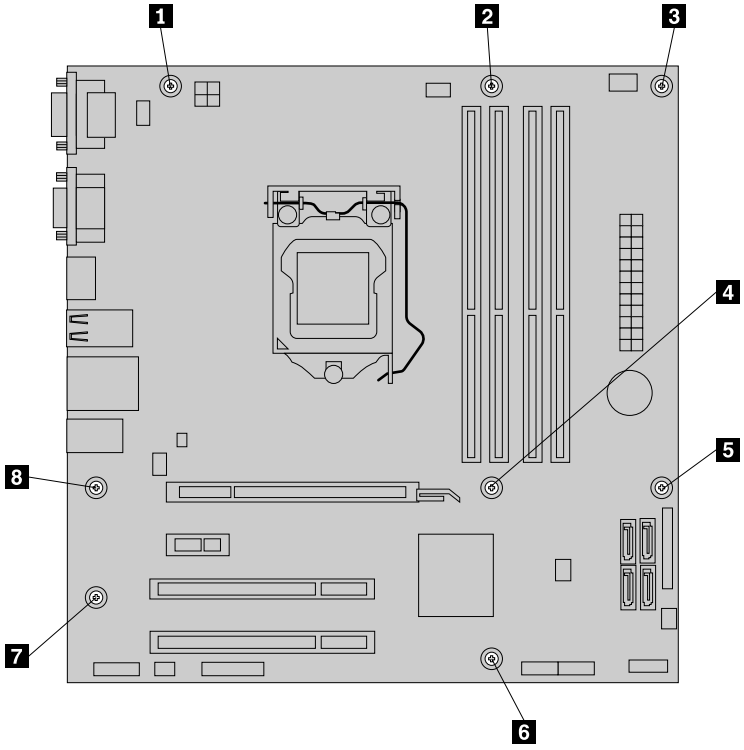


Figure 32. Removing the eight screws that secure the system board

9. Carefully slide the system board so that it can be released from the mounting studs that secure the system board in place.
10. Lift the system board out of the chassis.
11. Remove the microprocessor from the failing system board and install it on the new system board. See “Replacing the microprocessor” on page 97.
12. Install the new system board into the chassis by aligning the eight mounting studs in the chassis with the corresponding holes in the new system board. Carefully slide the new system board into the chassis until it is secured in place by the mounting studs. Then, install the eight screws to secure the system board.
13. Install all memory modules and PCI cards removed from the failing system board on the new system board. See “Installing or replacing a memory module” on page 84 and “Installing or replacing a PCI card” on page 81.
14. Install the heat sink and fan assembly and connect the heat sink and fan assembly cable to the new system board. See “Replacing the heat sink and fan assembly” on page 95.
15. Reconnect all remaining cables to the system board. See “Locating parts on the system board” on page 77.
16. Install the hard disk drive. See “Replacing the primary hard disk drive” on page 103 and See “Replacing the secondary hard disk drive” on page 105.
17. To complete the replacement, go to “Completing the parts replacement” on page 113.

The failing system board must be returned with a microprocessor socket cover to protect the pins during shipping and handling.

To install the microprocessor socket cover, do the following:

1. Release the lever securing the microprocessor retainer and open the retainer to access the microprocessor.
2. Grasp the microprocessor on the sides and lift it straight up and out of the socket. Do not touch the contacts on the microprocessor socket.
3. Note the orientation of the socket cover. Align the notches 1 of the microprocessor socket cover with the alignment keys 2 of the microprocessor socket.
4. Install one side of the socket cover into the microprocessor socket as shown.

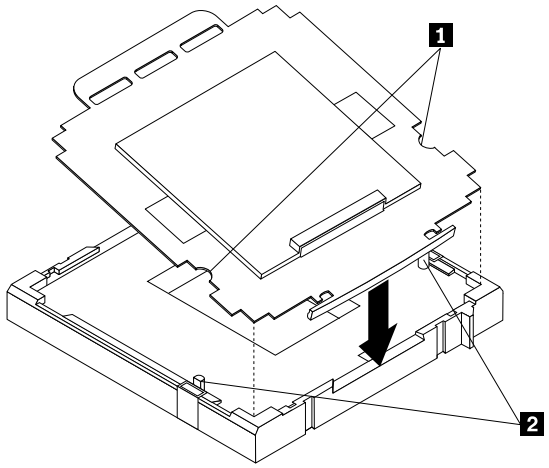


Figure 33. Installing the socket cover

Note: Your microprocessor socket and cover might look slightly different from the illustration.

5. Carefully press the other side of the socket cover downwards until the socket cover snaps into place.

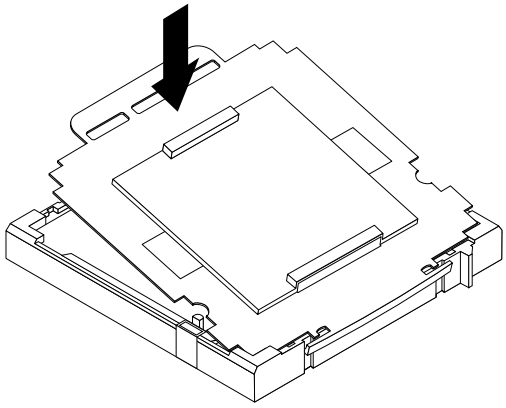


Figure 34. Securing the socket cover

6. Carefully check the four corners of the socket cover to make sure that the cover is secured in the microprocessor socket.
7. Lower the microprocessor retainer and then lower the lever to secure the retainer. Make sure the lever is locked into position.
8. Follow any additional instructions included with the replacement part you received.

Replacing the primary hard disk drive

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to: http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the primary hard disk drive.

To replace the primary hard disk drive, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Locate the primary hard disk drive. See “Locating internal drives” on page 78.
4. Disconnect the signal cable and the power cable from the hard disk drive.
5. Press the blue release tab **1** down, slide the hard disk drive cage **2** to the rear of the computer, and then pivot it outward.

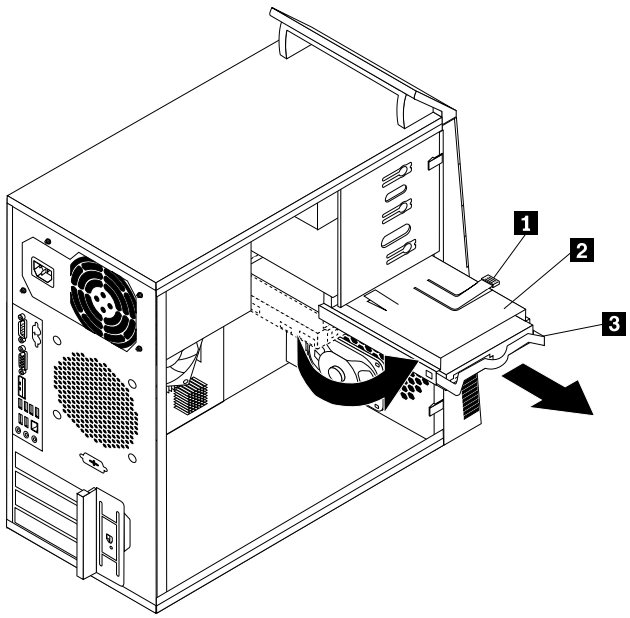


Figure 35. Removing the primary hard disk drive

6. Remove the hard disk drive cage from the chassis by sliding it outward.
7. Pull on the blue handle **3** to release and remove the hard disk drive from the drive cage.
8. Flex the sides of the blue bracket to remove the hard disk drive from the bracket.

9. To install a new hard disk drive into the blue bracket, flex the bracket and align pin 1, pin 2, pin 3, and pin 4 on the bracket with the corresponding holes in the hard disk drive. Do not touch the circuit board 5 on the bottom of the hard disk drive.

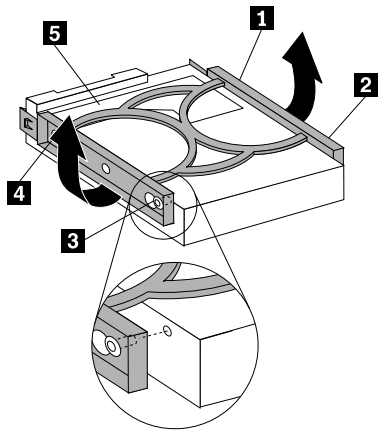


Figure 36. Installing the hard disk drive into the bracket

10. Slide the new hard disk drive into the drive cage until it snaps into position.
11. Align the drive cage pivot pin with the slot 1 in the upper drive cage and slide the hard disk drive cage into the chassis.
12. Connect the signal cable and the power cable to the new hard disk drive.
13. Press down on the metal latch 2 and pivot the drive cage into place, and then slide it to the front of the computer until it snaps into position.

    Note: There are two arrows, one on the upper drive cage and one on the hard disk drive cage. The arrows are aligned when the hard disk drive is in the proper position.

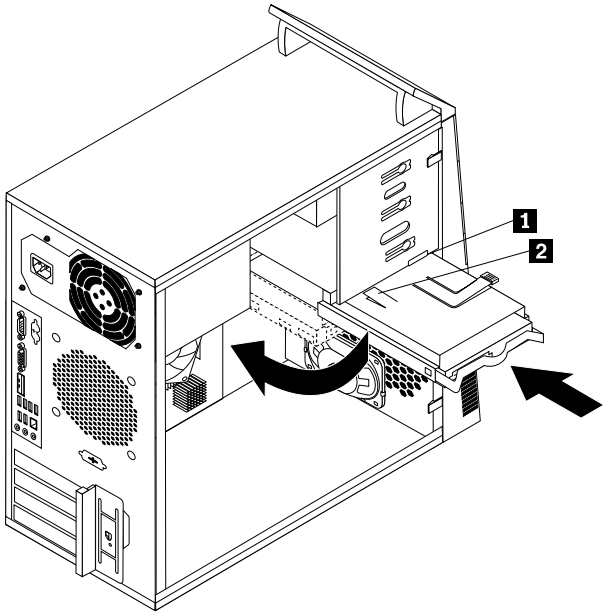


Figure 37. Installing the primary hard disk drive

14. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the secondary hard disk drive

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

Note: Depending on your model type, your computer might come with a secondary hard disk drive bay for installing or replacing a secondary hard disk drive.

This section provides instructions on how to replace the secondary hard disk drive.

To replace the secondary hard disk drive, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Locate the secondary hard disk drive. See “Locating internal drives” on page 78.
4. Disconnect the signal cable and the power cable from the hard disk drive.
5. Press the blue release button to release the hard disk drive cage from the chassis.

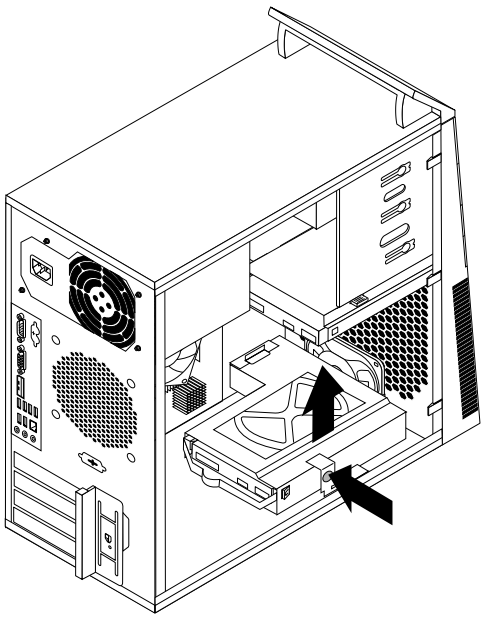


Figure 38. Removing the secondary hard disk drive

6. Remove the hard disk drive cage from the chassis by simply sliding it outward.
7. Pull on the blue handle to release and remove the hard disk drive from the hard disk drive cage.
8. Flex the sides of the blue bracket to remove the hard disk drive from the bracket.

9. To install a new hard disk drive into the blue bracket, flex the bracket and align pin 1, pin 2, pin 3, and pin 4 on the bracket with the corresponding holes in the hard disk drive. Do not touch the circuit board 5 on the bottom of the hard disk drive.

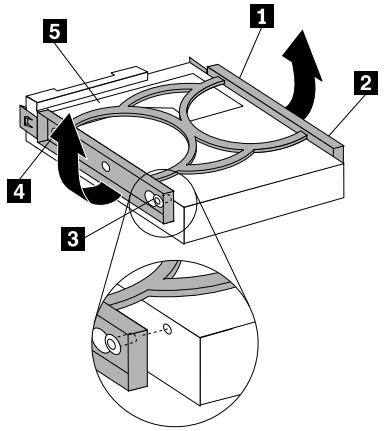


Figure 39. Installing the hard disk drive into the bracket

10. Slide the new hard disk drive into the hard disk drive cage until it snaps into position.
11. Install the hard disk drive cage into the chassis until it snaps into position underneath the metal tab. Make sure that the hard disk drive cage release button is secured in the chassis.

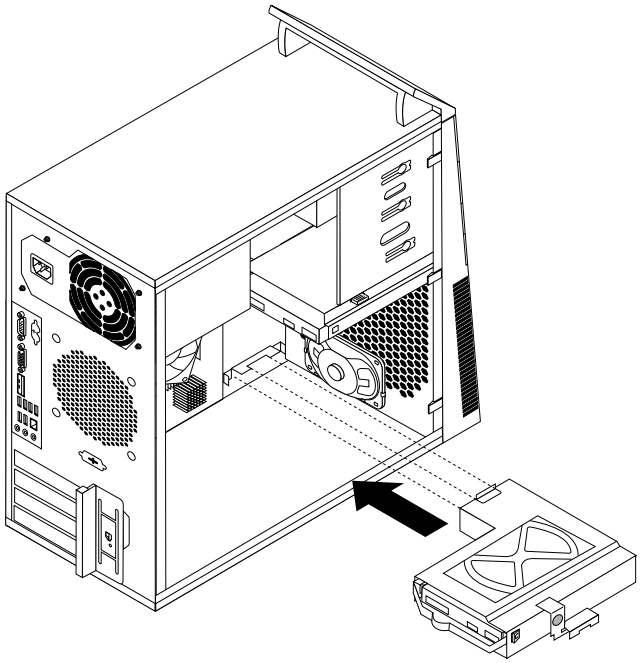


Figure 40. Installing the secondary hard disk drive

12. Connect the signal cable and the power cable to the new hard disk drive.
13. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the front fan assembly

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to: http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the front fan assembly.

Note: The front fan assembly is only available in some models.

To replace the front fan assembly, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 80.
4. Disconnect the front fan assembly cable from the power fan connector on the system board. See “Locating parts on the system board” on page 77.
5. Release the two tabs **1** that attach the front fan assembly to the chassis as shown and then completely remove the front fan from the chassis.

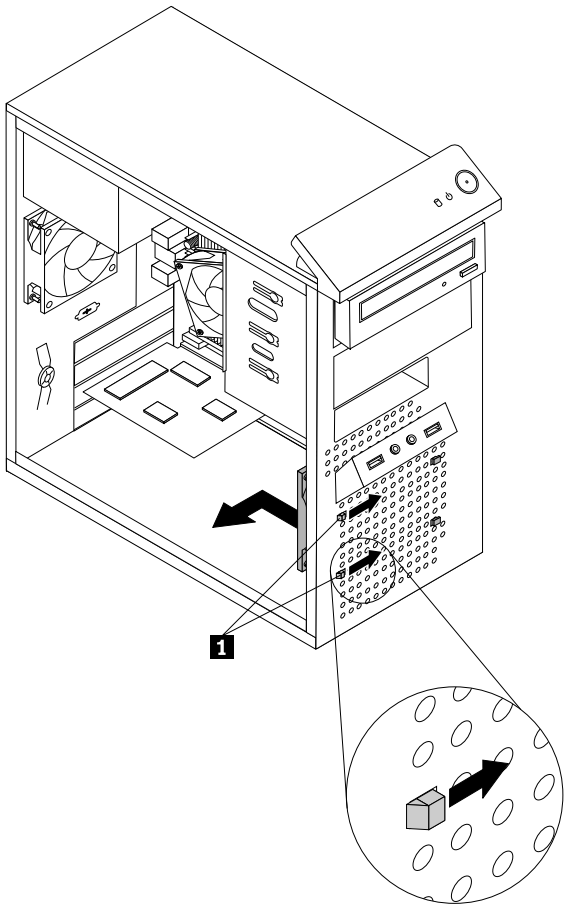


Figure 41. Removing the front fan assembly

6. Insert the two tabs **2** of the new front fan assembly into the corresponding holes in the chassis, and press the other two tabs **1** through the holes until the front fan assembly is secured in place.

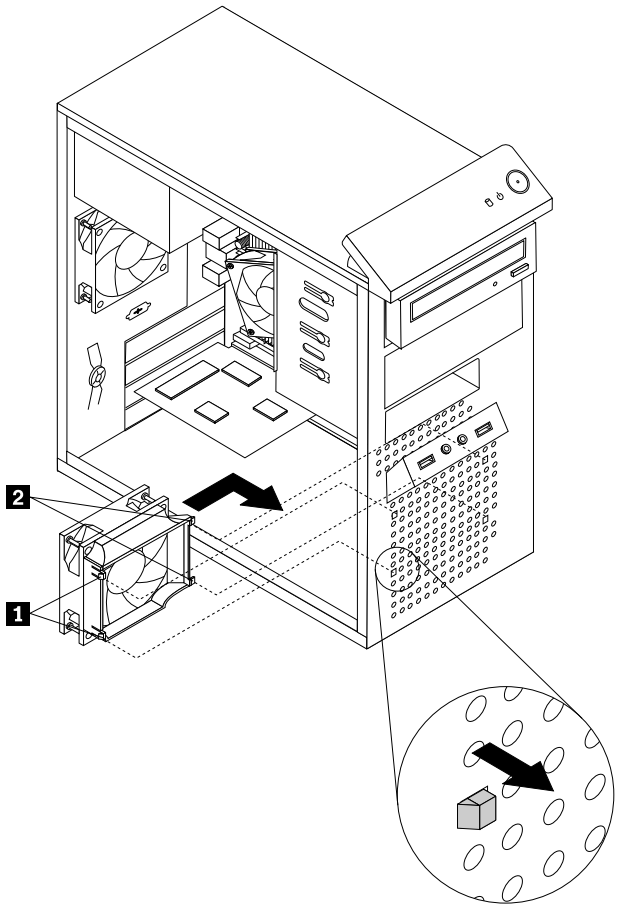


Figure 42. Installing the front fan assembly

7. Connect the front fan assembly cable to the power fan connector on the system board.
8. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the rear fan assembly

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the rear fan assembly.

To replace the rear fan assembly, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Locate the rear fan assembly. See “Locating components” on page 76.
4. Disconnect the rear fan assembly cable from the system fan connector on the system board. See “Locating parts on the system board” on page 77.

5. The rear fan assembly is attached to the chassis by four rubber mounts. Remove the rear fan assembly by breaking or cutting the rubber mounts and gently pulling the rear fan assembly out of the chassis.

   Note: The new rear fan assembly will have four new rubber mounts attached.

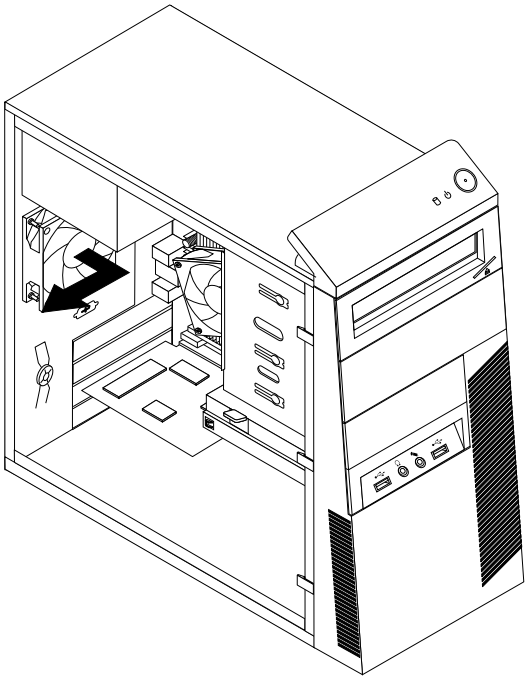


Figure 43. Removing the rear fan assembly

6. Install the new rear fan assembly by aligning the new rubber mounts with the corresponding holes in the chassis and push the rubber mounts through the holes.

7. Pull on the tips of the rubber mounts until the rear fan assembly is secured in place.

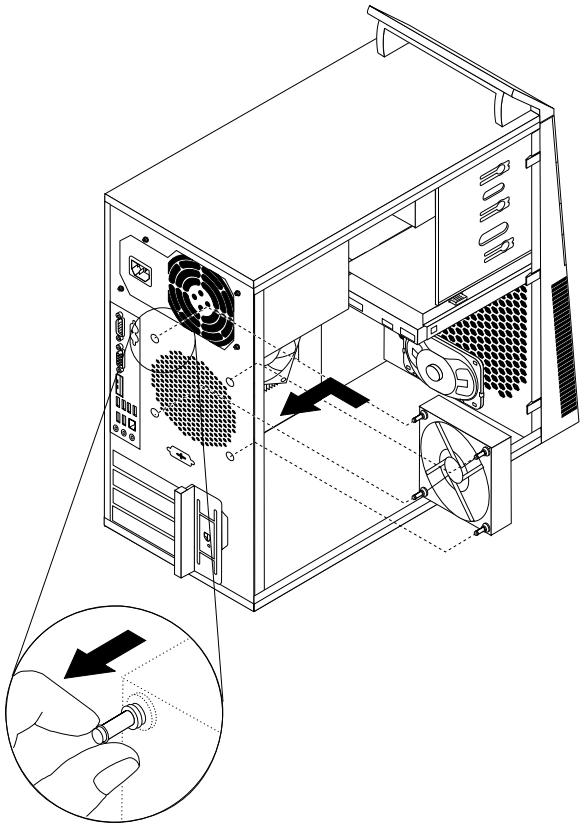


Figure 44. Installing the rear fan assembly

8. Connect the rear fan assembly cable to the system fan connector on the system board.
9. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the front audio and USB assembly

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the front audio and USB assembly.

To replace the front audio and USB assembly, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 80.
4. Locate the front audio and USB assembly. See “Locating components” on page 76.
5. Disconnect the front audio and USB assembly cables from the system board. See “Locating parts on the system board” on page 77.

   Note: Make sure you note the locations of the cables when you disconnect the cables from the system board.

6. Remove the screw that secures the front audio and USB assembly bracket to the chassis to remove the bracket from the chassis.

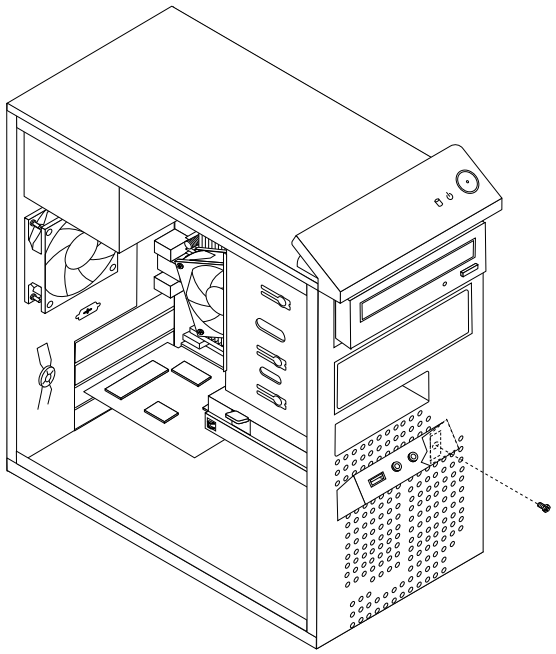


Figure 45. Removing the screw that secures the front audio and USB assembly to the chassis

7. Remove the two screws that secure the front audio and USB assembly to its bracket and remove the failing front audio and USB assembly from the bracket.
8. Install a new front audio and USB assembly into the bracket and install the two screws to secure the front audio and USB assembly to the bracket.
9. Install the front audio and USB assembly bracket into the chassis and align the screw hole in the bracket with the corresponding hole in the chassis.
10. Install the screw to secure the bracket to the chassis.
11. Reconnect the front audio and USB assembly cables to the front audio connector and the front USB connector on the system board. See “Locating parts on the system board” on page 77.
12. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Replacing the internal speaker

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the internal speaker.

Note: The internal speaker is only available on some models.

To replace the internal speaker, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the computer cover. See “Removing the computer cover” on page 79.

3. Locate the internal speaker connector on the system board. See “Locating parts on the system board” on page 77.
4. Disconnect the internal speaker cable from the system board.
5. Push the metal tab **1** on the top of the internal speaker outward and slide the internal speaker upward to completely remove it from the chassis.

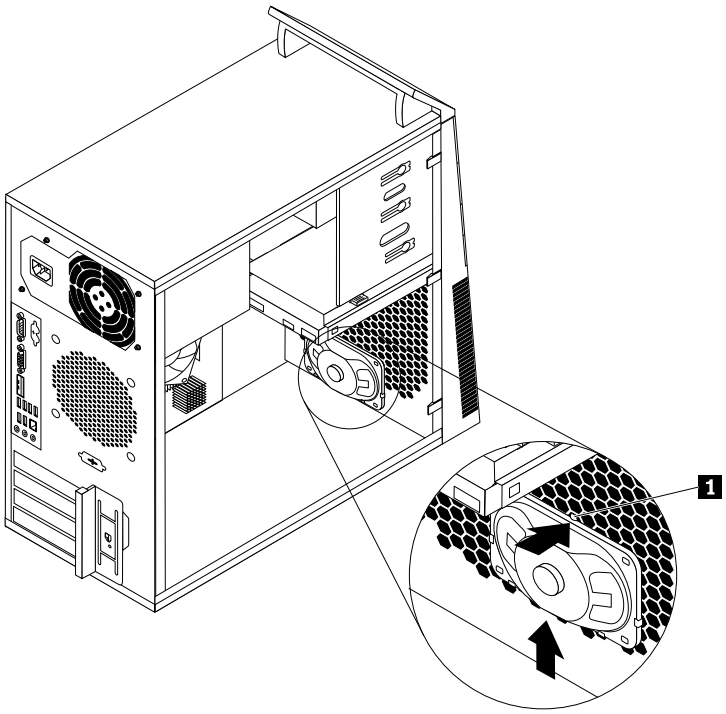


Figure 46. Removing the old internal speaker

6. Position the new internal speaker into the four metal clips **1** and push downward on the internal speaker until it is secured in place.

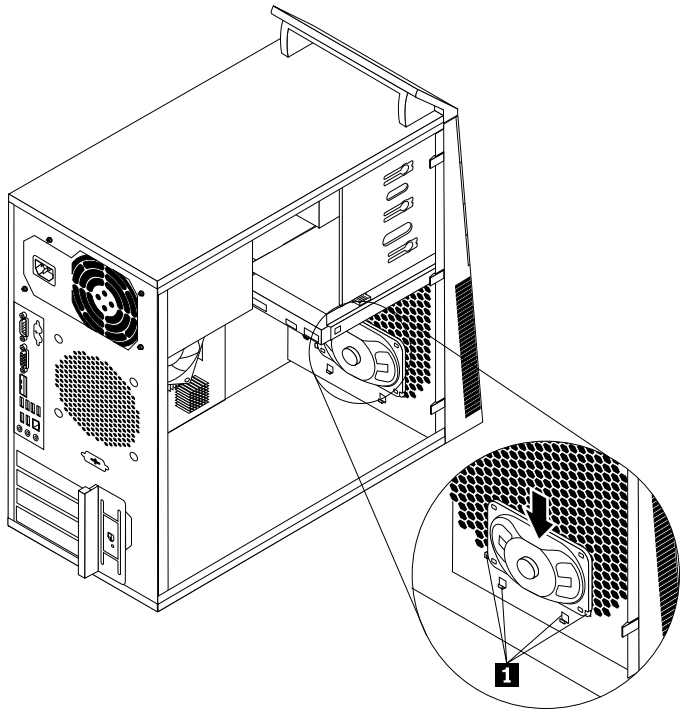


Figure 47. Installing a new internal speaker

7. Connect the internal speaker cable to the system board. See “Locating parts on the system board” on page 77.
8. To complete the installation or replacement, go to “Completing the parts replacement” on page 113.

Completing the parts replacement

After completing the installation or replacement for all parts, you need to reinstall the computer cover and reconnect cables. Depending on the parts you installed or replaced, you might need to confirm the updated information in the Setup Utility program. Refer to Chapter 6 “Using the Setup Utility program” on page 43.

To reinstall the computer cover and reconnect cables to your computer, do the following:

1. Make sure that all components have been reassembled correctly and that no tools or loose screws are left inside your computer. See “Locating components” on page 76 for the locations of various components in your computer.
2. If you have removed the front bezel, reinstall it. See “Removing and reinstalling the front bezel” on page 80.
3. Make sure that the cables are routed correctly before reinstalling the computer cover. Keep cables clear of the hinges and sides of the computer chassis to avoid interference with reinstalling the computer cover.

4. Position the computer cover on the chassis so that the rail guides on the bottom of the computer cover engage the rails on the chassis. Then, push the cover to the front of the computer until it snaps into position.

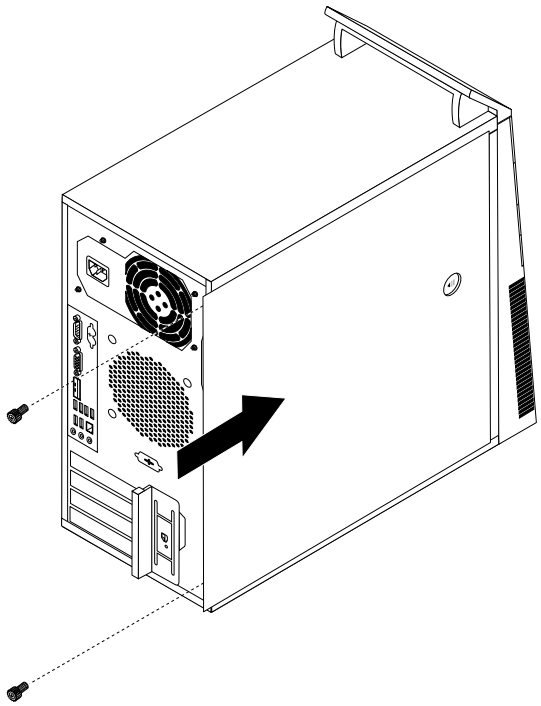


Figure 48. Reinstalling the computer cover

5. Install the screws to secure the computer cover.
6. If there is a padlock available, lock the computer cover.
7. If there is an integrated cable lock available, lock the computer.
8. Reconnect the external cables and power cords to the computer. See “Locating connectors on the rear of your computer” on page 75.
9. To update your configuration, refer to Chapter 6 “Using the Setup Utility program” on page 43.

Note: In most areas of the world, Lenovo requires the return of the defective Field Replaceable Units (FRUs). Information about this will come with the new FRUs or will come a few days after you receive the new FRUs.

Chapter 9. Replacing FRUs (Machine Types: 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177.)

Important: Be sure to read and understand Chapter 2 “Safety information” on page 3 before you replace any FRU. These precautions and guidelines will help you work safely.

FRU replacements are to be done only by trained service technicians.

This chapter does not contain the remove or replace procedure for all FRUs. Only the major FRUs are documented.

Locations

This section provides information to help you locate your computer connectors, components, parts on the system board, and internal drives.

Note: The components in your computer might look slightly different from the illustrations.

© Copyright Lenovo 2011, 2012

Locating connectors, controls, and indicators on the front of your computer

Figure 49 “Front connector, control, and indicator locations” on page 116 shows the locations of the connectors, controls, and indicators on the front of your computer.

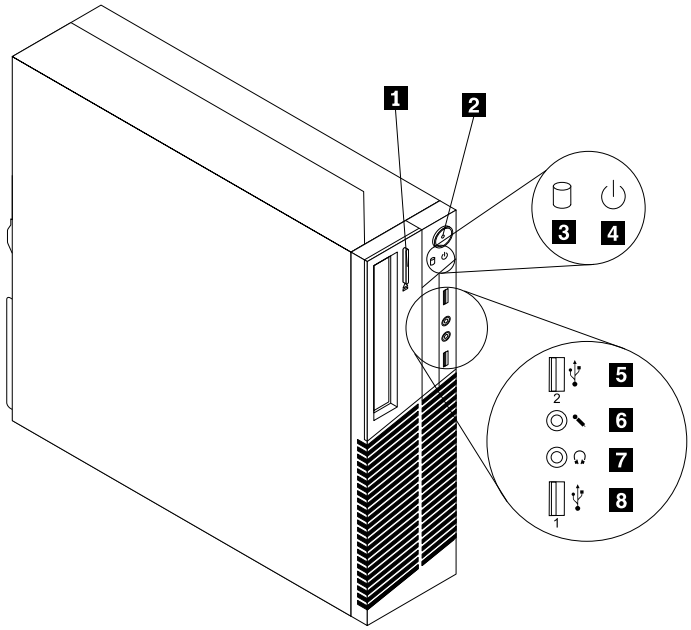


Figure 49. Front connector, control, and indicator locations

1 Optical drive eject/close button
2 Power switch
3 Hard disk drive activity indicator
4 Power indicator
5 USB connector (USB port 2)
6 Microphone connector
7 Headphone connector
8 USB connector (USB port 1)

Locating connectors on the rear of your computer

Figure 50 “Rear connector locations” on page 117 shows the locations of the connectors on the rear of your computer. Some connectors on the rear of your computer are color-coded to help you determine where to connect the cables on your computer.

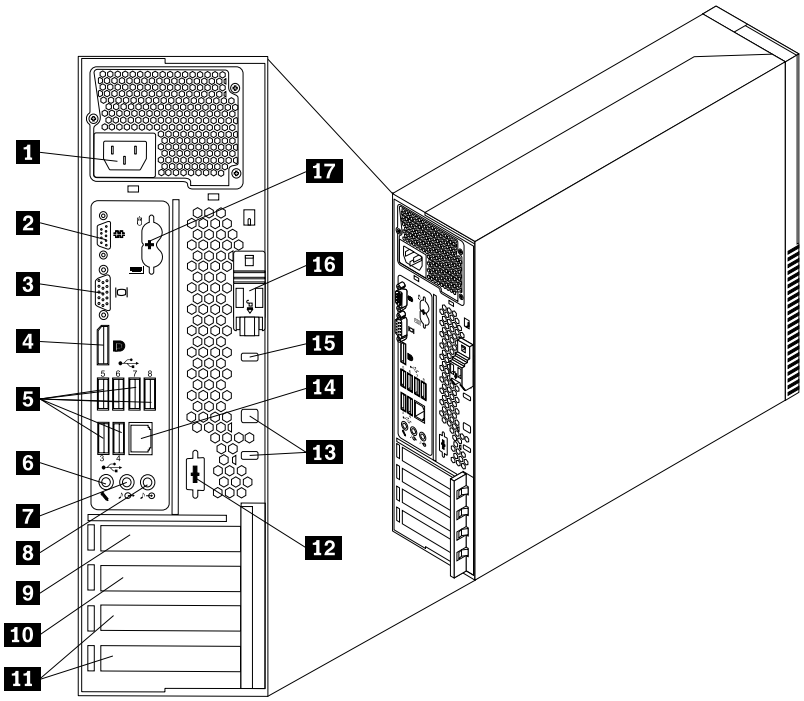


Figure 50. Rear connector locations

1 Power cord connector
2 Serial port (Serial port 1)
3 VGA monitor connector
4 DisplayPort connector
5 USB connectors (USB ports 3 to 8)
6 Microphone connector
7 Audio line-out connector
8 Audio line-in connector
9 PCI Express x16 graphics card slot
10 PCI Express x1 card slot
11 PCI card slots
12 Optional serial port (Serial port 2)
13 Cable lock slots (2)
14 Ethernet connector
15 Integrated cable lock (Kingston lock) slot
16 Cover-release button
17 PS/2 keyboard and mouse connectors (optional)

Locating components

Figure 51 “Component locations” on page 118 shows the locations of the various components in your computer. To open the computer cover, see “Opening the computer cover” on page 121.

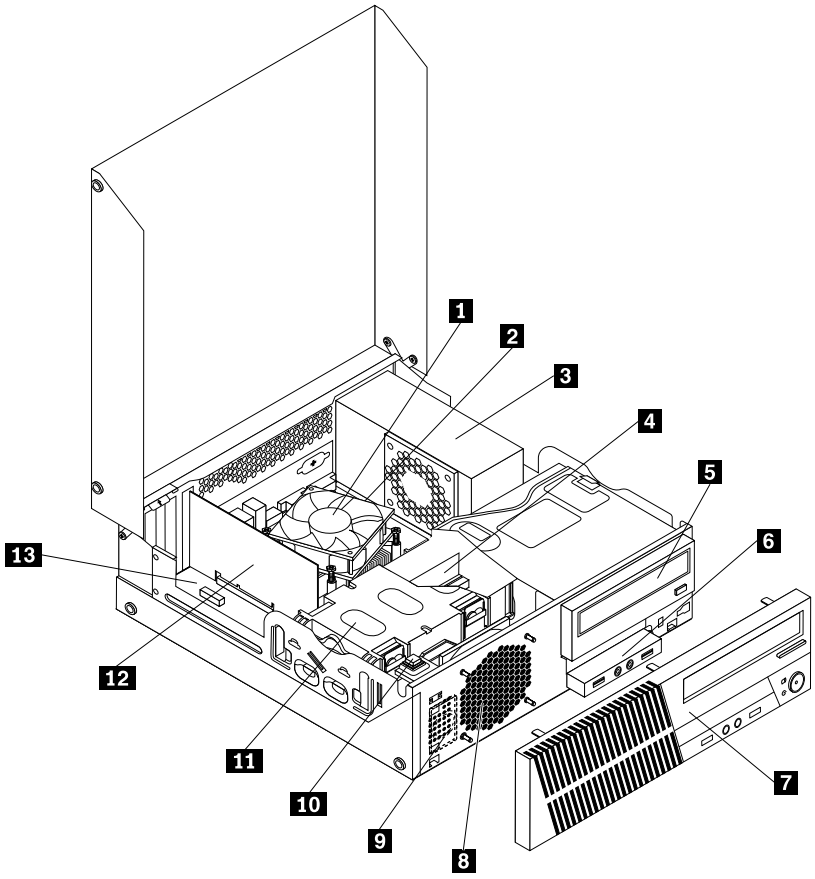


Figure 51. Component locations

1 Heat sink and fan assembly
2 Microprocessor
3 Power supply assembly
4 Memory module
5 Optical drive
6 Front audio and USB assembly
7 Front bezel
8 System fan assembly
9 Internal speaker (installed in some models)
10 Cover presence switch (Intrusion switch)
11 Hard disk drive
12 Graphics card (installed in some models)
13 System board

Locating parts on the system board

Figure 52 “System board parts locations” on page 119 shows the locations of the parts on the system board.

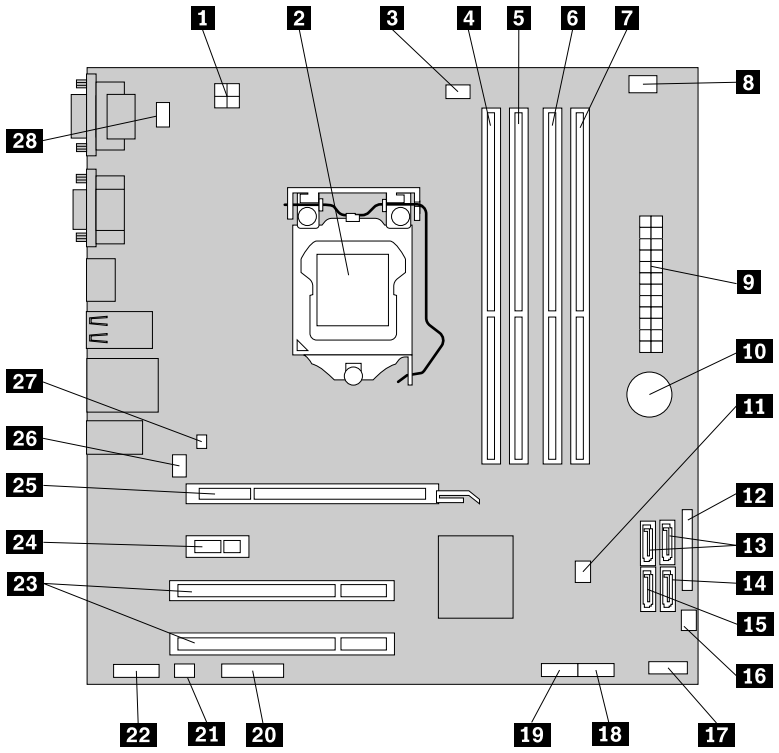


Figure 52. System board parts locations

1 4-pin power connector

2 Microprocessor

3 Microprocessor fan connector

4 Memory slot 1 (DIMM1)

5 Memory slot 2 (DIMM2)

6 Memory slot 3 (DIMM3)

7 Memory slot 4 (DIMM4)

8 Thermal sensor connector

9 24-pin power connector

10 Battery

11 Clear CMOS (Complementary Metal Oxide Semiconductor) /Recovery jumper

12 Parallel connector

13 SATA connectors 1 and 2 (SATA 3.0 connectors)

14 SATA connector 3 (SATA 2.0 connector)

15 eSATA connector

16 Power fan connector

17 Front panel connector (for connecting power switch and LED indicators)

18 Front USB connector 1 (for connecting USB port 1and 2 on the front bezel)

19 Front USB connector 2 (for connecting additional USB devices)

20 Serial (COM2) connector

21 Internal speaker connector

22 Front audio connector

23 PCI card slots (2)

24 PCI Express x1 card slot

25 PCI Express x16 graphics card slot

26 System fan connector

27 Cover presence switch connector (Intrusion switch connector)

28 PS/2 keyboard and mouse connector

Locating internal drives

Internal drives are devices that your computer uses to read and store data. You can add drives to your computer to increase storage capacity and enable your computer to read other types of media. Internal drives are installed in bays. In this manual, the bays are referred to as bay 1, bay 2, and so on. Your computer comes with the following factory-installed drives:

- An optical drive in bay 1
- A 3.5-inch hard disk drive in bay 3

When installing or replacing an internal drive, it is important to note the type and size of the drive that you can install or replace in each bay and correctly connect the cables to the drive installed. Refer to the appropriate section in “Installing or replacing hardware” on page 121 for instructions on how to install or replace internal drives for your computer.

Figure 53 “Drive bay locations” on page 120 shows the locations of the drive bays.

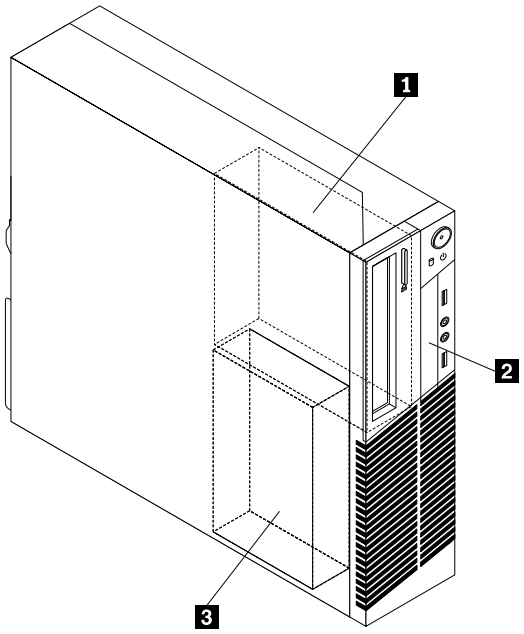


Figure 53. Drive bay locations

1 Bay 1 - Optical drive bay (with an optical drive installed)

2 Bay 2 - Card reader drive bay

2 Bay 3 - SATA hard disk drive bay (with a 3.5-inch hard disk drive installed)

Handling static-sensitive devices

Do not open the static-protective package containing the new part until the defective part has been removed from the computer and you are ready to install the new part. Static electricity, although harmless to you, can seriously damage computer components and parts.

When you handle computer parts and components, take these precautions to avoid static-electricity damage:

- Limit your movement. Movement can cause static electricity to build up around you.

- Always carefully handle the parts and other computer components. Handle PCI cards, memory modules, system boards, and microprocessors by the edges. Never touch exposed circuitry.
- Prevent others from touching the parts and other computer components.
- Before you replace a new part, touch the static-protective package containing the new part to a metal expansion-slot cover or other unpainted metal surface on the computer for at least two seconds. This reduces static electricity from the package and your body.
- Remove the new part from the static-protective package and directly install it in the computer without placing it on any other surface. If it is hard for you to do this in your specific situation, place the static-protective package of the new part on a smooth, level surface, and then place the new part on the static-protective package.
- Do not place the part on the computer cover or other metal surface.

Installing or replacing hardware

This section provides instructions on how to install or replace hardware for your computer. You can expand the capabilities of your computer and maintain your computer by installing or replacing hardware.

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

Notes:

1. Use only computer parts provided by Lenovo.
2. When installing or replacing an option, use the appropriate instructions in this section along with the instructions that come with the option.

Opening the computer cover

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to open the computer cover.

CAUTION:



Turn off the computer and wait three to five minutes to let the computer cool before opening the computer cover.

To open the computer cover, do the following:

1. Remove any media from the drives and turn off all attached devices and the computer.
2. Disconnect all power cords from electrical outlets.
3. Disconnect the power cords, Input/Output cables, and any other cables that are connected to the computer. See “Locating connectors, controls, and indicators on the front of your computer” on page 74 and “Locating connectors on the rear of your computer” on page 75.
4. Remove any locking device that secures the computer cover, such as an integrated cable lock.

5. Press the cover-release button on the back of the computer and pivot the computer cover upward.

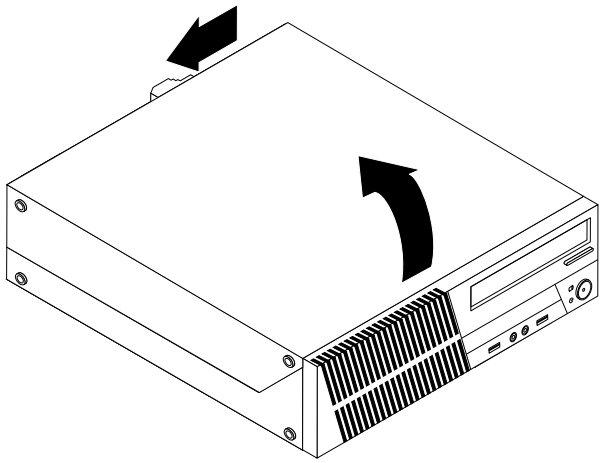


Figure 54. Opening the computer cover

Removing and reinstalling the front bezel

Attention:
Do not open your computer or attempt any repair before reading and understanding the "Important safety information" in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to remove and reinstall the front bezel.

To remove and reinstall the front bezel, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See "Opening the computer cover" on page 121.

3. Remove the front bezel by releasing the three plastic tabs on the top of the front bezel and pivoting the front bezel outward to remove it from the computer.

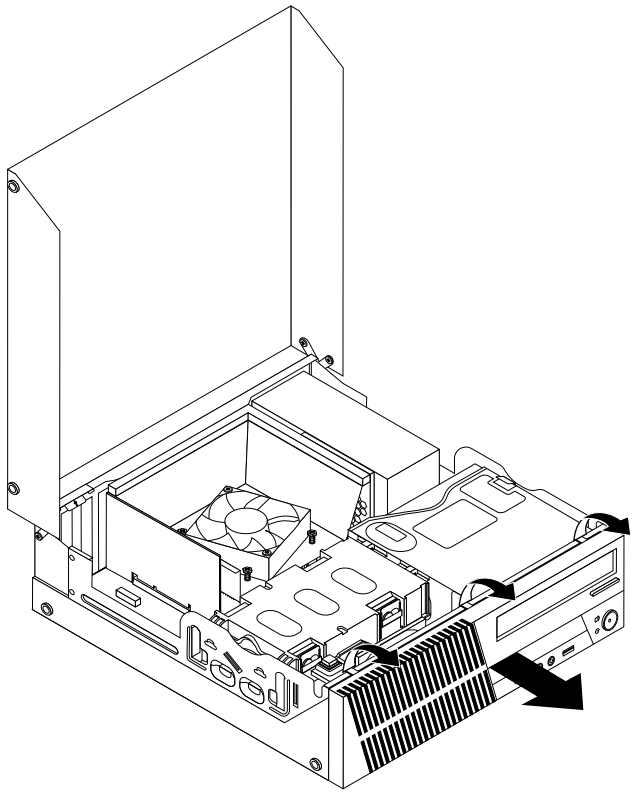


Figure 55. Removing the front bezel

4. To reinstall the front bezel, align the other three plastic tabs on the bottom of the front bezel with the corresponding holes in the chassis, then pivot the front bezel inward until it snaps into position.

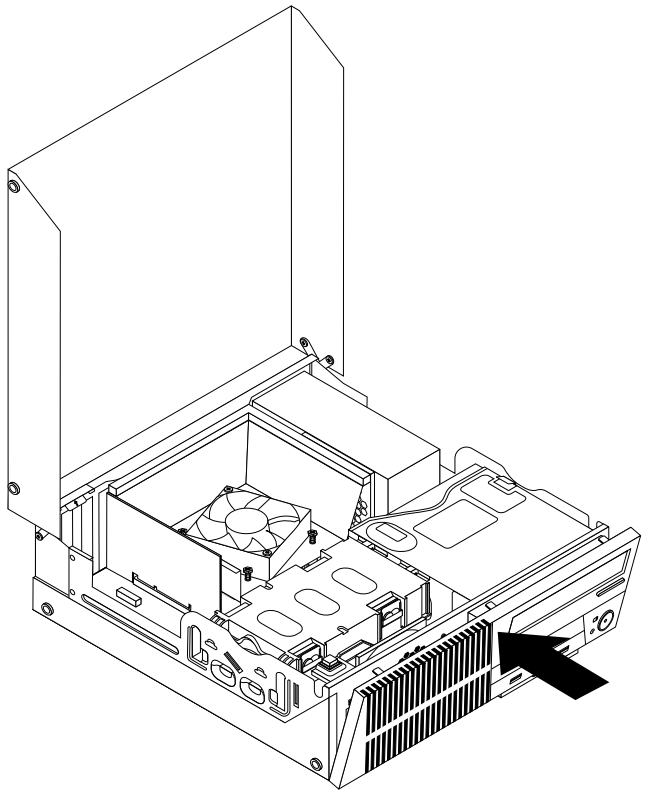


Figure 56. Reinstalling the front bezel

Accessing the system board components and drives

Attention:
Do not open your computer or attempt any repair before reading and understanding the "Important safety information" in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to access the system board components and drives.

To access the system board components and drives, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See "Opening the computer cover" on page 121.
3. Remove the front bezel. See "Removing and reinstalling the front bezel" on page 122.
4. Remove the heat sink fan duct. See "Replacing the heat sink and fan assembly" on page 139.
5. Remove the hard disk drive. See "Replacing the hard disk drive" on page 134.
6. Pivot the optical drive bay upward to access the system board components and the cables. See "Replacing the optical drive" on page 137.

Installing or replacing a memory module

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to: http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to install or replace a memory module.

Your computer has four slots for installing or replacing DDR3 UDIMMs that provide up to a maximum of 32 GB system memory. When installing or replacing a memory module, use the following guidelines:

- Use 1 GB, 2 GB, 4 GB, or 8 GB DDR3 UDIMMs in any combination up to a maximum of 32 GB.
- Install memory modules in the sequence of DIMM 2, DIMM 4, DIMM 1, and DIMM 3. See “Locating parts on the system board” on page 77.

To install or replace a memory module, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 122.
4. Remove the heat sink fan duct. See “Replacing the heat sink and fan assembly” on page 139.
5. Remove the hard disk drive. See “Replacing the hard disk drive” on page 134.
6. Pivot the optical drive bay upward to gain access to the memory slots. See “Replacing the optical drive” on page 137.
7. Locate the memory slots. See “Locating parts on the system board” on page 77.
8. Remove any parts that might prevent access to the memory slots.
9. Depending on whether you are installing or replacing a memory module, do one of the following:
   - If you are replacing an old memory module, open the retaining clips and gently pull the memory module out of the memory slot.

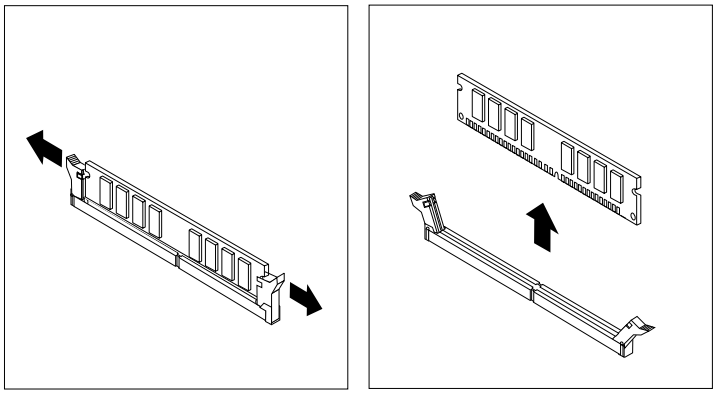


Figure 57. Removing a memory module

- If you are installing a memory module, open the retaining clips of the memory slot into which you want to install the memory module.

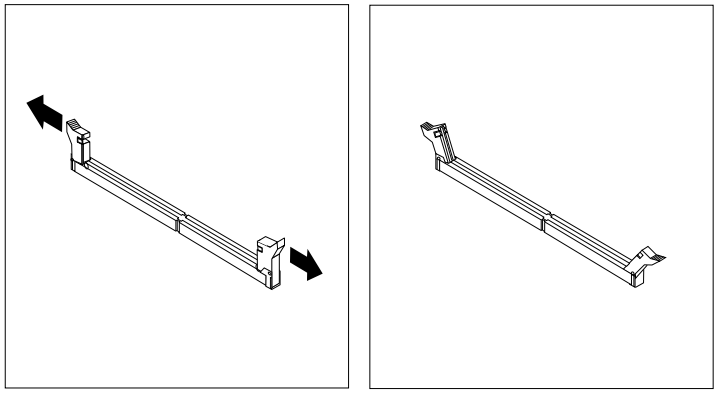


Figure 58. Opening the retaining clips

10. Position the new memory module over the memory slot. Make sure that the notch 1 on the memory module aligns correctly with the slot key 2 on the system board. Push the memory module straight down into the slot until the retaining clips close.

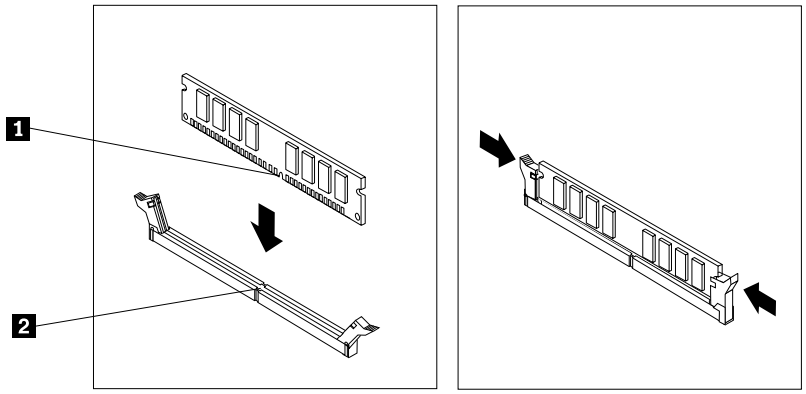


Figure 59. Installing a memory module

11. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Installing or replacing a PCI card

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to install or replace a PCI card. Your computer has two standard PCI card slots, one PCI Express x1 card slot, and one PCI Express x16 graphics card slot.

To install or replace a PCI card, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 121.

3. Rotate the PCI card retainer to the open position.
4. Depending on whether you are installing or replacing a PCI card, do one of the following:
   - If you are installing a PCI card, remove the appropriate metal slot cover.
   - If you are replacing an old PCI card, grasp the old card that is currently installed and gently pull it out of the slot.

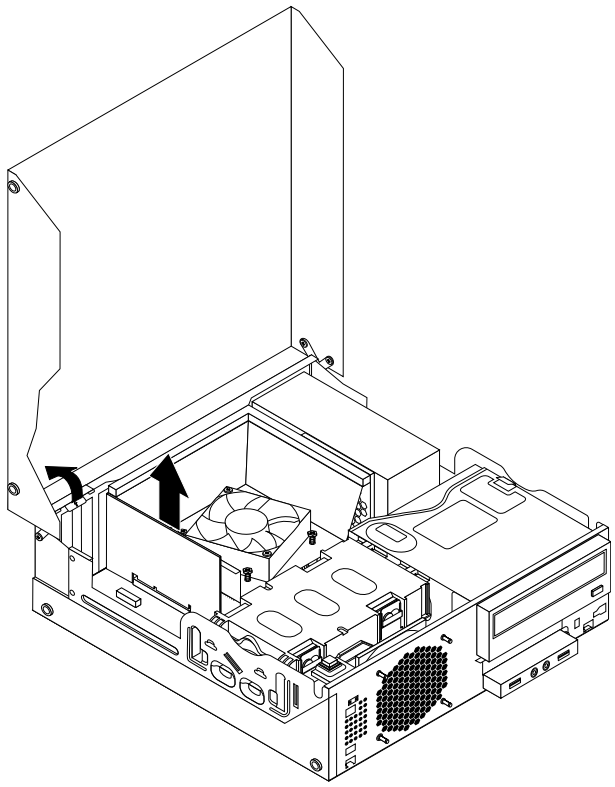
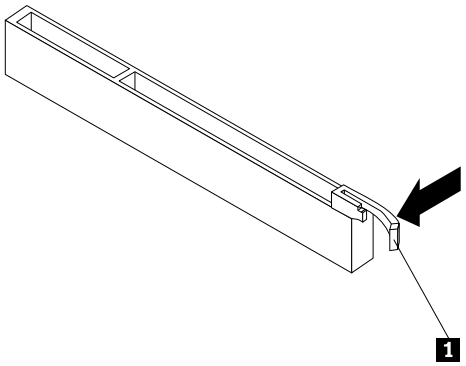


Figure 60. Removing a PCI card

Notes:

a. The card fits tightly into the card slot. If necessary, alternate moving each side of the card a small amount until it is removed from the card slot.

b. If the card is held in place by a retaining latch, press the card retaining latch **1** as shown to disengage the latch. Grasp the card and gently pull it out of the slot.



5. Remove the new PCI card from its static-protective package.

6. Install the new card into the appropriate card slot on the system board and rotate the card retainer to the closed position. See “Locating parts on the system board” on page 77.

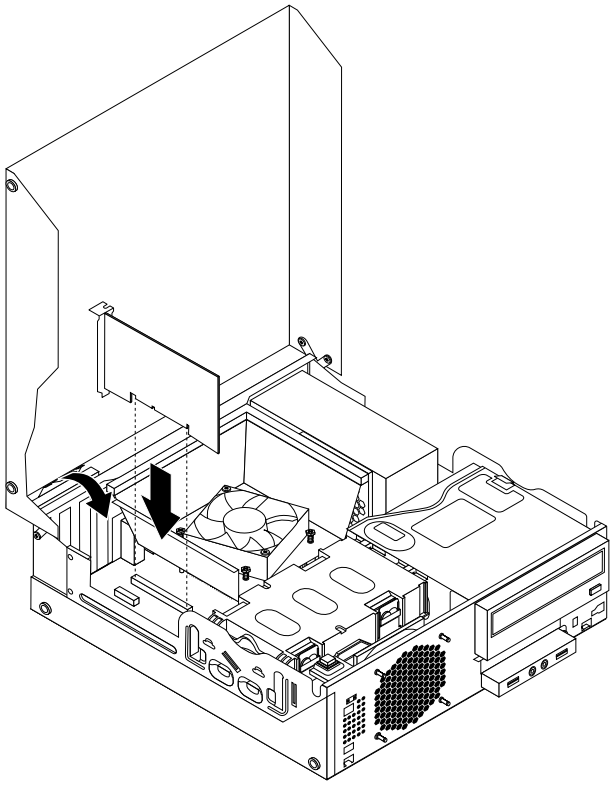


Figure 61. Installing the PCI card

7. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Installing or replacing the card reader

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to install or replace the card reader.

Note: The card reader is only available in some models. For new installation, see “Installing the card reader” on page 128. For replacement, see “Replacing the card reader” on page 130.

Installing the card reader

To install the card reader, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 122.
4. Locate the card reader drive bay. See “Locating internal drives” on page 120.

   Note: You might have to remove the metal cover of the card reader drive bay.

5. Install the new card reader into the card reader bracket. Then install the two screws to secure the card reader to the bracket.
6. Install the card reader bracket to the chassis. Then push the bracket to the left to align the screw hole in the bracket with the corresponding hole in the chassis.

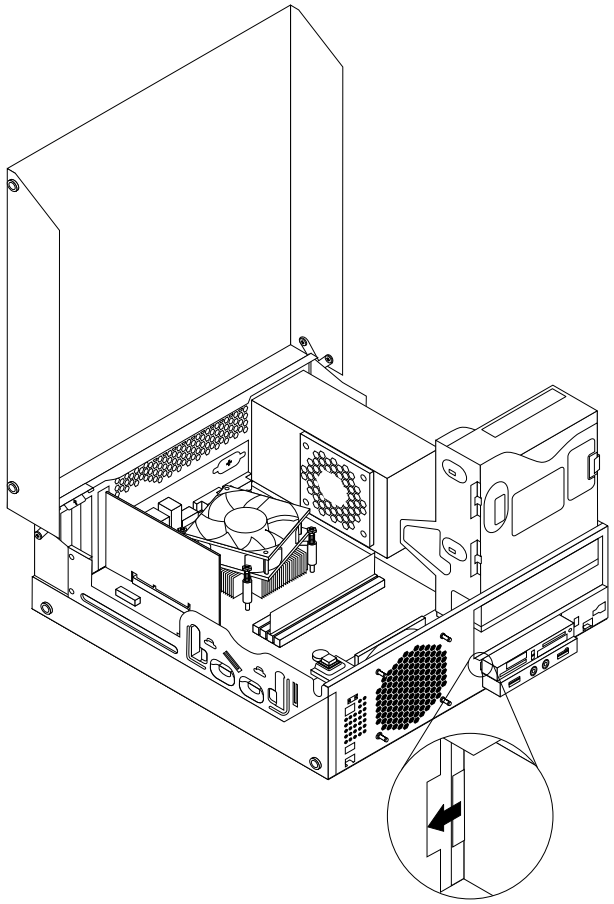


Figure 62. Installing the card reader

7. Install the screw to secure the card reader bracket to the chassis.

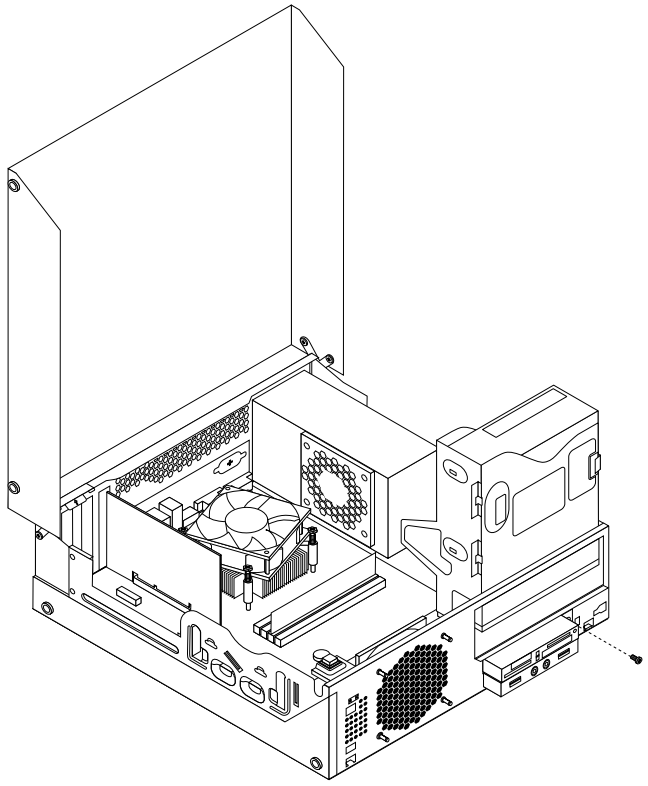


Figure 63. Installing the screw that secures the card reader

8. Pivot the optical drive bay upward and connect the card reader cable to one of the USB connectors on the system board. See “Locating parts on the system board” on page 77.
9. Reinstall the front bezel. See “Removing and reinstalling the front bezel” on page 122.

   Note: You might have to remove the card reader cover **2** from the front bezel. To remove the card read cover, pivot the two retaining clips **1** that secure the card reader cover outwards and then completely disengage the card reader cover from the front bezel.

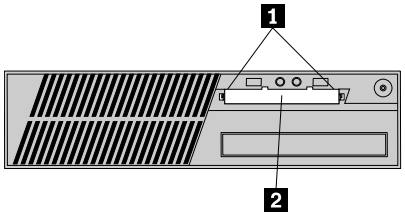


Figure 64. Removing the card reader cover

10. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Replacing the card reader

To replace the card reader, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 122.
4. Locate the card reader drive bay. See “Locating internal drives” on page 120.
5. Pivot the optical drive bay upward and disconnect the card reader cable from the USB connector on the system board. See “Locating parts on the system board” on page 77.
6. Remove the screw that secures the card reader bracket. Then, remove the card reader bracket from the chassis.

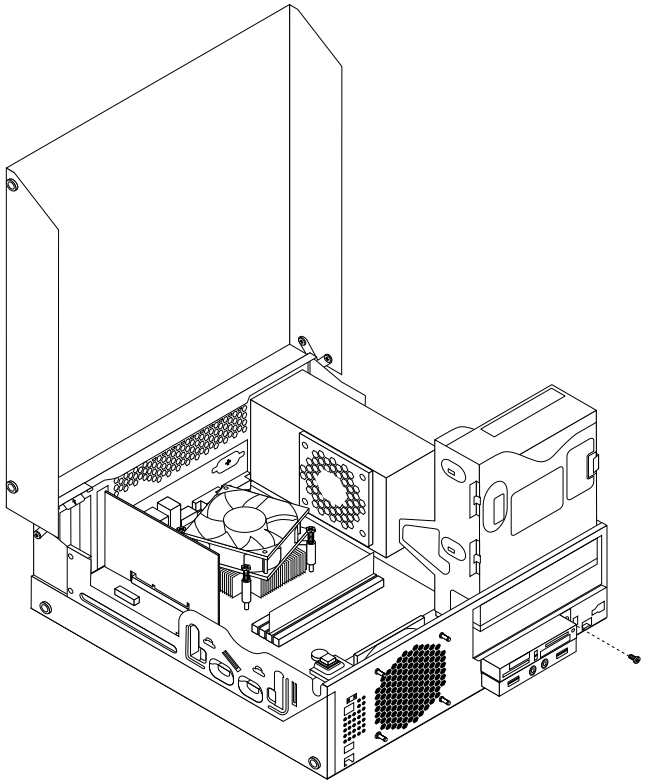


Figure 65. Removing the screw that secures the card reader

7. Remove the two screws that secure the card reader to its bracket. Then remove the failing card reader from the bracket.
8. Install a new card reader into the bracket and install the two screws to secure the card reader to the bracket.

9. Install the card reader bracket to the chassis. Then push the bracket to the left to align the screw hole in the bracket with the corresponding hole in the chassis.

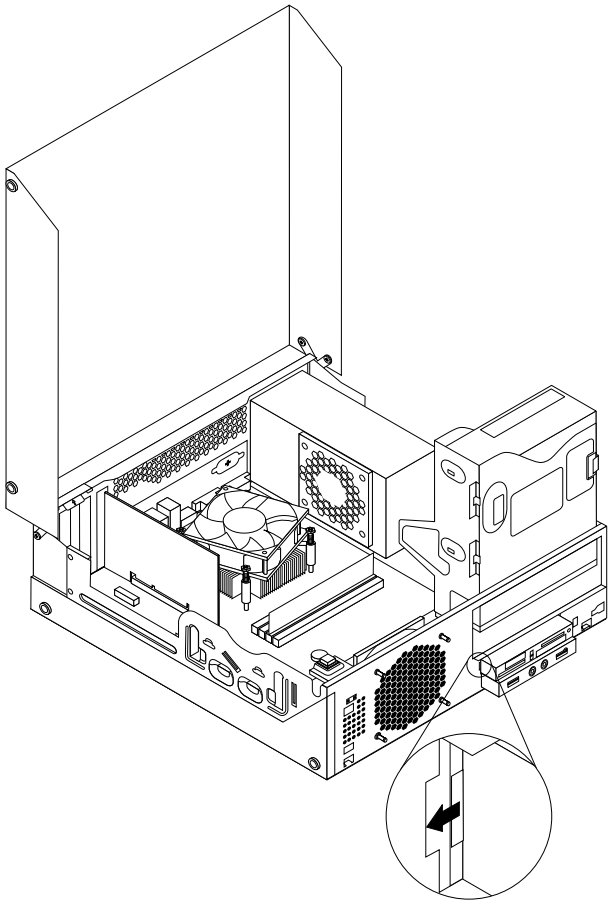


Figure 66. Installing the card reader

10. Install the screw to secure the card reader bracket to the chassis.

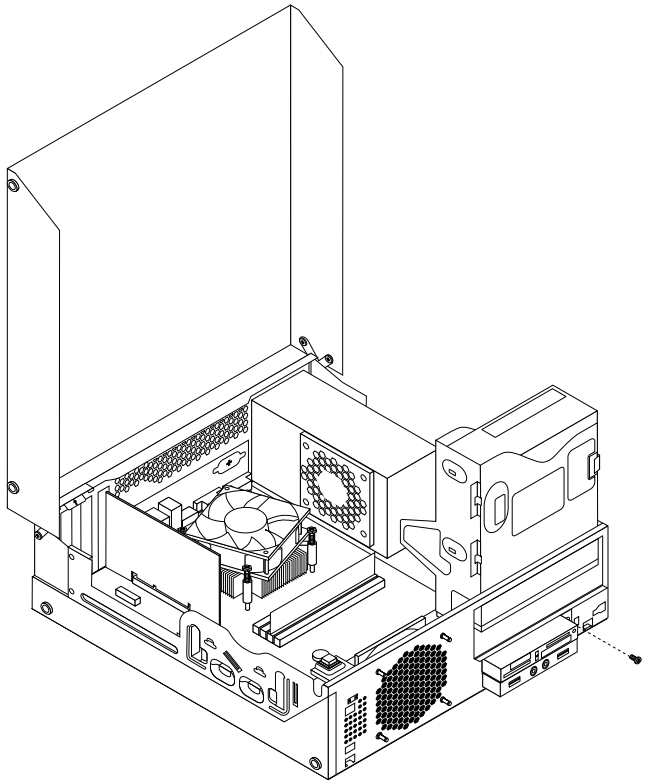


Figure 67. Installing the screw that secures the card reader

11. Pivot the optical drive bay upward and reconnect the card reader cable to one of the USB connectors on the system board. See “Locating parts on the system board” on page 77.
12. Reinstall the front bezel. See “Removing and reinstalling the front bezel” on page 122.
13. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Replacing the battery

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

Your computer has a special type of memory that maintains the date, time, and configuration information for built-in features. The battery keeps this information active when you turn off the computer.

The battery normally requires no charging or maintenance throughout its life; however, no battery lasts forever. If the battery fails, the date, time, and configuration information, including passwords, are lost. An error message is displayed when you turn on the computer.

Before performing the following procedure, be sure to read and understand the information about replacing and disposing of the battery in the “Batteries” and “Lithium battery notice” sections of the *ThinkCentre Safety and Warranty Guide*.

To replace the battery, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Locate the battery. See “Locating parts on the system board” on page 119.
4. Remove any parts and disconnect any cables that might prevent your access to the battery.
5. Remove the old battery.

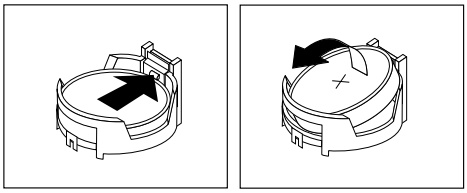


Figure 68. Removing the old battery

6. Install the new battery.

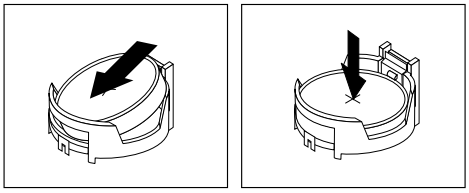


Figure 69. Installing the new battery

7. Reinstall any parts and reconnect any cables that have been removed or disconnected.
8. Close the computer cover and reconnect all external cables. See “Completing the parts replacement” on page 160.
9. Turn on the computer and all attached devices.

   Note: When the computer is turned on for the first time after replacing the battery, an error message might be displayed. This is normal after replacing the battery.
10. Use the Setup Utility program to set the date, time, passwords, and any other configuration information. See Chapter 6 “Using the Setup Utility program” on page 43.

Replacing the hard disk drive

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the hard disk drive.

To replace the hard disk drive, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Locate the hard disk drive. See “Locating components” on page 118.

4. Pull on the handle of the hard disk drive bracket as shown and then lift the hard disk drive bracket up from the optical drive bay.

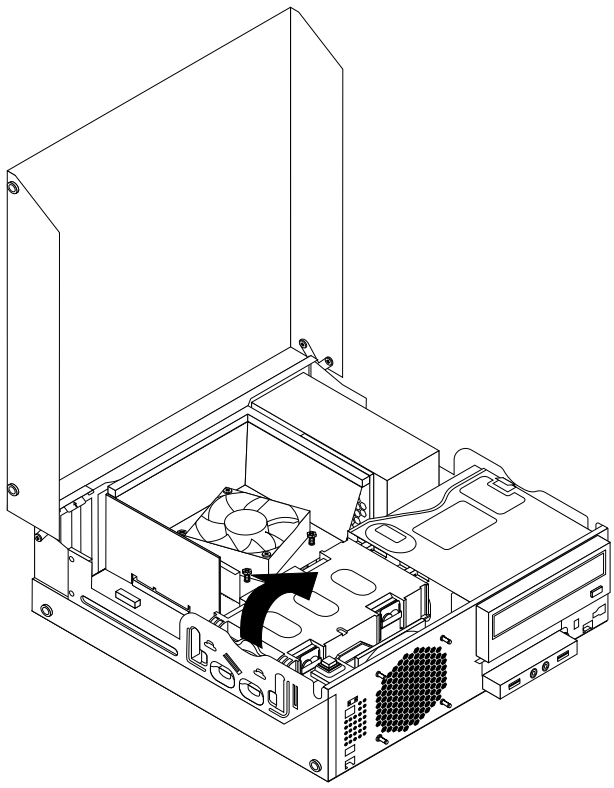


Figure 70. Removing the hard disk drive

5. Disconnect the signal cable and the power cable from the hard disk drive to completely remove the hard disk drive from the chassis.
6. Flex the retaining clips as shown to remove the hard disk drive from the bracket.

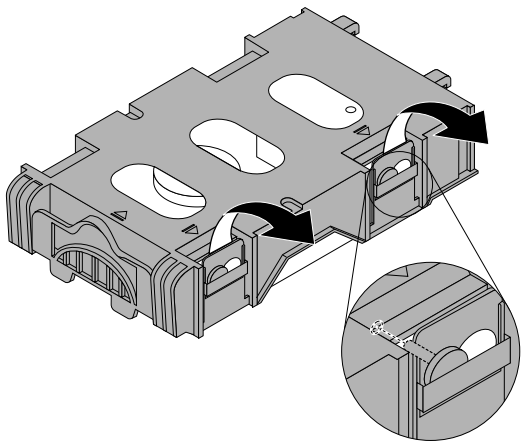
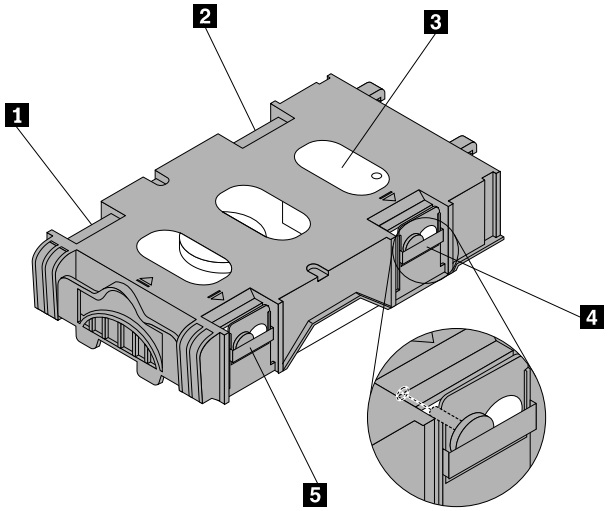


Figure 71. Removing the hard disk drive from the bracket

7. To install a new hard disk drive into the bracket, flex the bracket and align pin 1, pin 2, pin 4, and pin 5 on the bracket with the corresponding holes in the hard disk drive.

   Important: Do not touch the circuit board 3 on the bottom of the hard disk drive.



8. Connect the signal cable and the power cable to the new hard disk drive.
9. Insert the two retaining clips 1 of the hard disk drive bracket into the corresponding holes in the side of the optical drive bay, and then pivot the hard disk drive and bracket downwards until the hard disk drive bracket snaps into position.

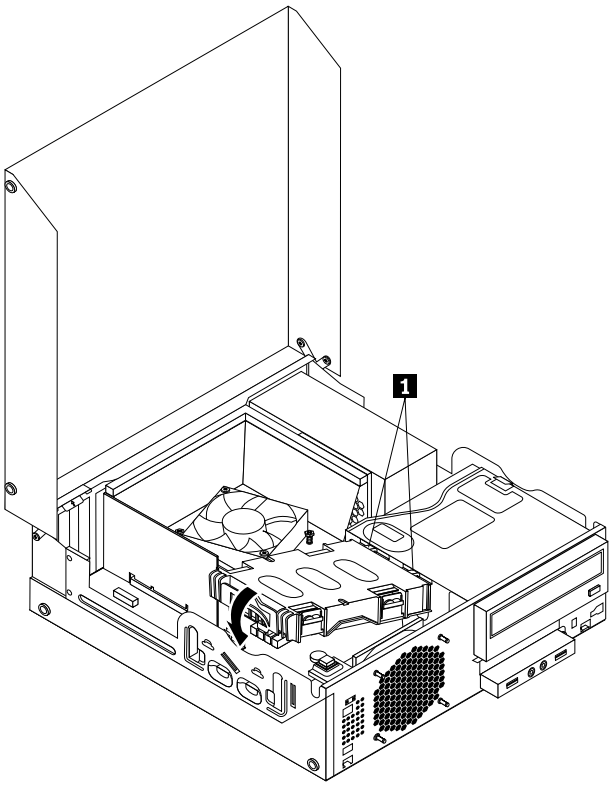


Figure 72. Installing the hard disk drive

10. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Replacing the optical drive

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the optical drive.

To replace the optical drive, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 122.
4. Remove the hard disk drive. See “Replacing the hard disk drive” on page 134.
5. Press the blue retaining clip to pivot the optical drive bay upward.

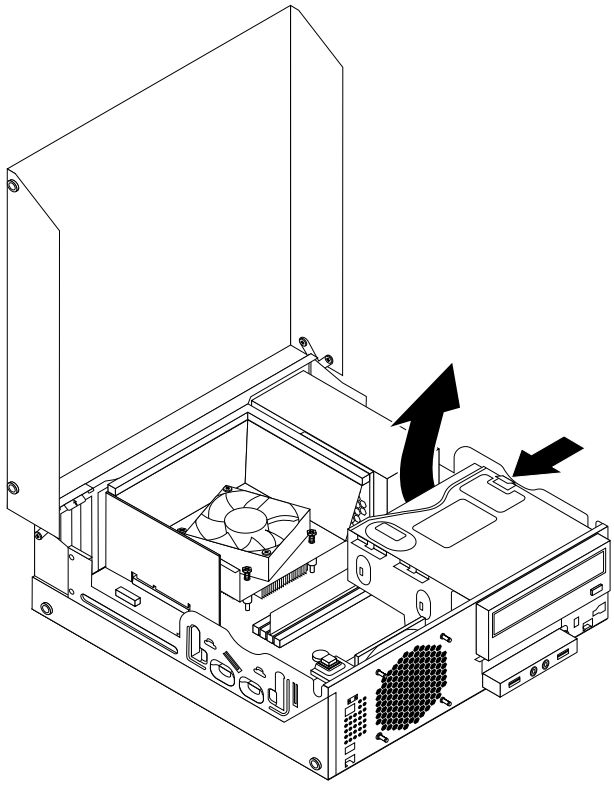


Figure 73. Pivoting the optical drive bay

6. Disconnect the signal cable and the power cable from the rear of the optical drive.

7. Press the optical drive lock **1** and slide the optical drive out of the rear of the drive bay assembly.

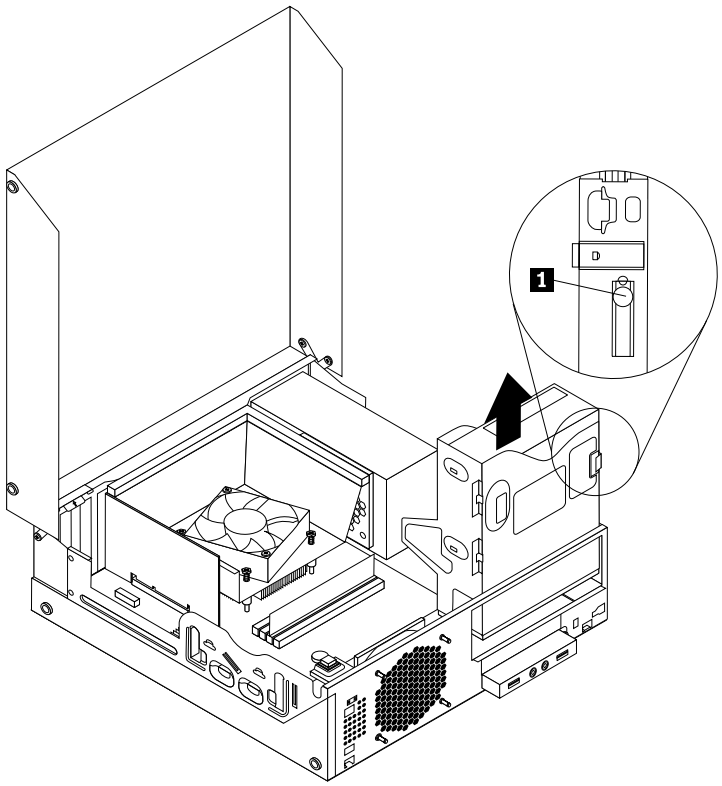


Figure 74. Removing the old optical drive

8. Install the optical drive retainer on the side of the new optical drive.

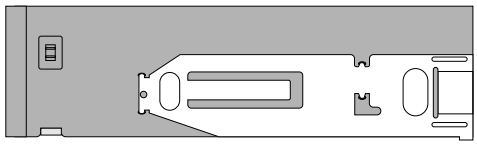


Figure 75. Installing the optical drive retainer

9. Slide the new optical drive into the drive bay until it snaps into position.

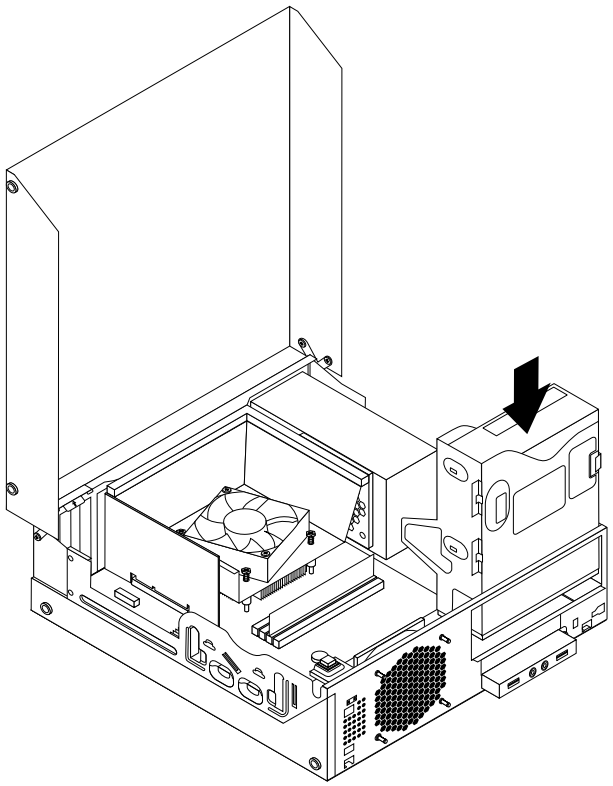


Figure 76. Installing a new optical drive

10. Connect the signal cable and the power cable to the rear of the optical drive.
11. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Replacing the heat sink and fan assembly

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the heat sink and fan assembly.

CAUTION:



The heat sink and fan assembly might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To replace the heat sink and fan assembly, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Disconnect the heat sink and fan assembly cable from the microprocessor fan connector on the system board. See “Locating parts on the system board” on page 77.

4. Follow this sequence to remove the four screws that secure the heat sink and fan assembly to the system board:
   a. Partially remove screw 1, then fully remove screw 2, and then fully remove screw 1.
   b. Partially remove screw 3, then fully remove screw 4, and then fully remove screw 3.

   Note: Carefully remove the four screws from the system board to avoid any possible damage to the system board. The four screws cannot be removed from the heat sink and fan assembly.

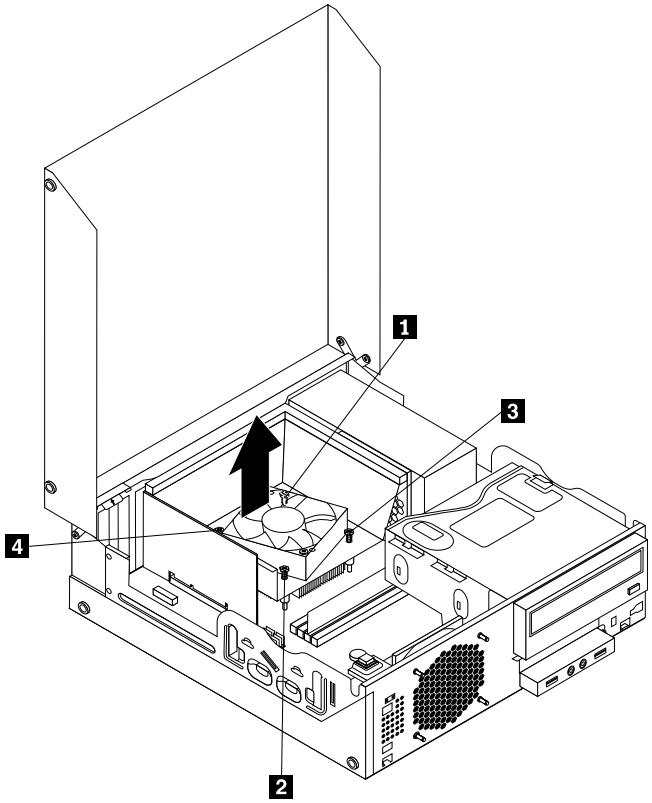


Figure 77. Screws that secure the heat sink and fan assembly

5. Lift the heat sink and fan assembly with the fan duct off the system board.

   Notes:
   a. You might have to gently twist the heat sink and fan assembly to free it from the microprocessor.
   b. When handling the heat sink and fan assembly, do not touch the thermal grease on the bottom of the heat sink and fan assembly.

6. Remove the two screws that secure the heat sink fan duct. Then remove the heat sink fan duct from the failing heat sink and fan assembly.

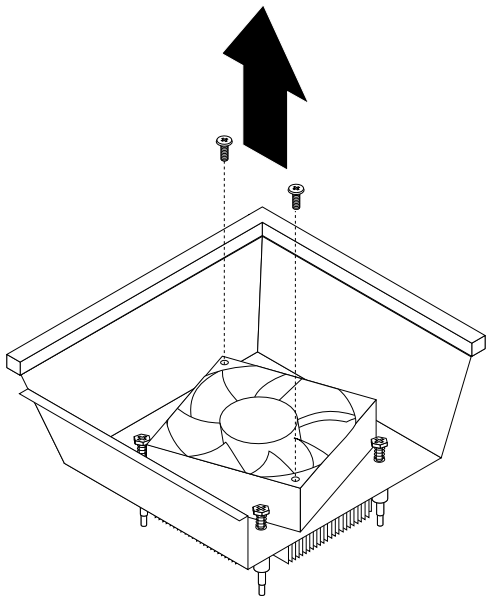


Figure 78. Removing the heat sink fan duct

7. Place the new heat sink and fan assembly on the system board so that the four screws are aligned with the corresponding holes in the system board. Make sure that you properly place the new heat sink and fan assembly so that you can easily connect the new heat sink and fan assembly cable to the microprocessor fan connector on the system board.
8. Follow this sequence to install the four screws to secure the new heat sink and fan assembly, as shown in Figure 77 “Screws that secure the heat sink and fan assembly” on page 140:
   a. Partially tighten screw **1**, then fully tighten screw **2**, and then fully tighten screw **1**.
   b. Partially tighten screw **3**, then fully tighten screw **4**, and then fully tighten screw **3**.
9. Connect the new heat sink and fan assembly cable to the microprocessor fan connector on the system board. See “Locating parts on the system board” on page 77.

10. Lower and position the heat sink fan duct on the top of the heat sink and fan assembly until the two screw holes in the heat sink fan duct are aligned with those in the heat sink and fan assembly. Install the two screws to secure the heat sink fan duct.

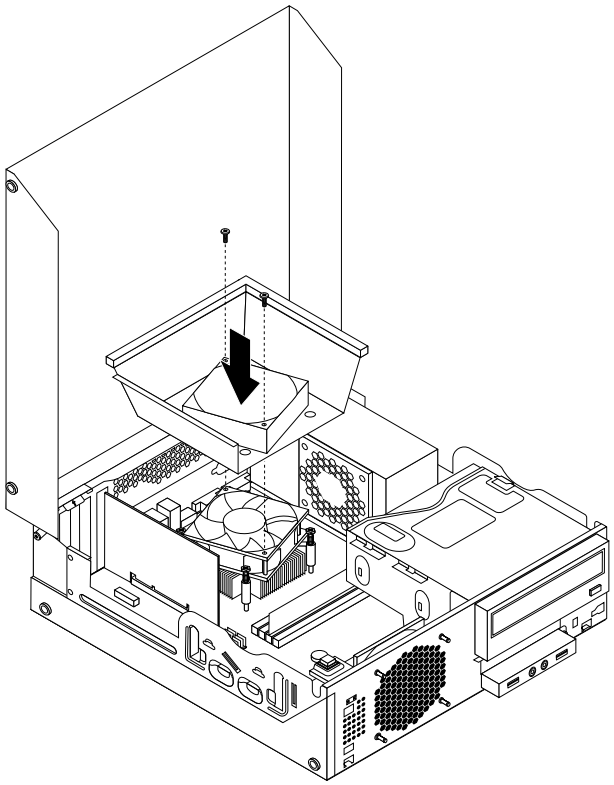


Figure 79. Installing the heat sink fan duct

11. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

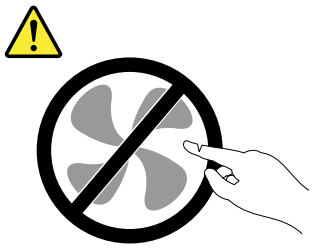
Replacing the power supply assembly

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the power supply assembly.

Although there are no moving parts in your computer after the power cord has been disconnected, the following warnings are required for your safety and proper Underwriters Laboratories (UL) certification.

DANGER



Hazardous moving parts. Keep fingers and other body parts away.

CAUTION:
Never remove the cover on a power supply or any part that has the following label attached.



Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, contact a service technician.

To replace the power supply assembly, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 122.
4. Remove the hard disk drive. See “Replacing the hard disk drive” on page 134.

5. Remove the two screws that secure the heat sink fan duct, and then lift the heat sink fan duct out of the chassis.

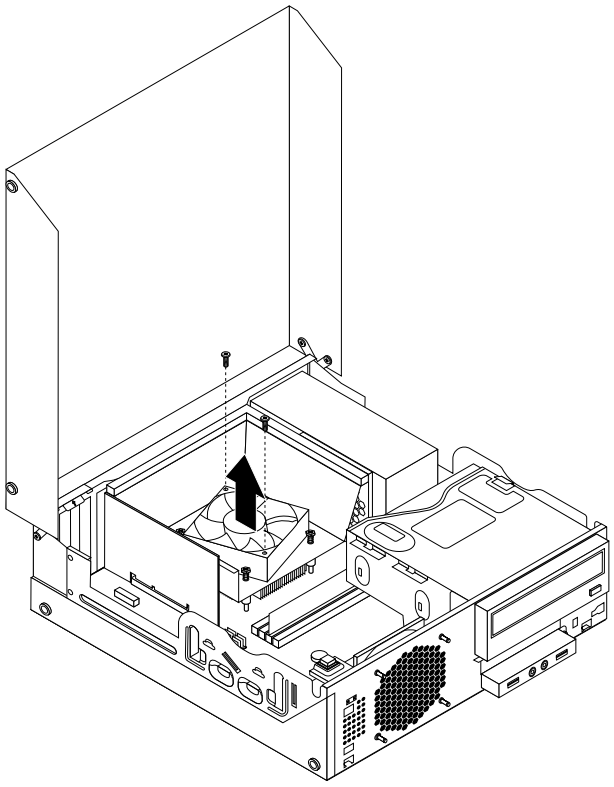


Figure 80. Removing the heat sink fan duct

6. Pivot the optical drive upward and disconnect the power supply assembly cables from all drives and from power connectors **1** and **2** on the system board.

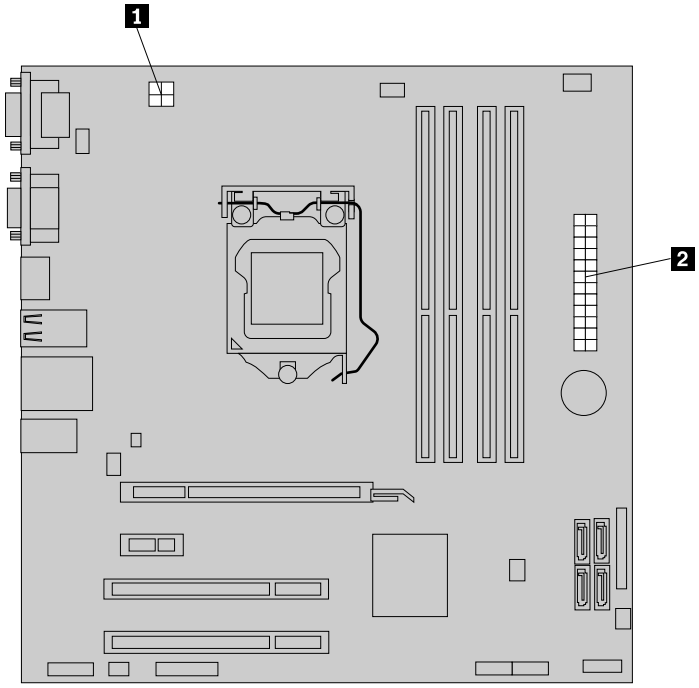


Figure 81. Power connectors on the system board

Note: You might also need to release the power supply assembly cables from some cable clips or ties that secure the cables to the chassis. Make sure that you note the cable routing before disconnecting the cables.

7. At the rear of the computer, remove the three screws that secure the power supply assembly. Press the power supply clip **1** downward to release the power supply assembly and then slide the power supply assembly to the front of the computer. Lift the power supply assembly out of the computer.

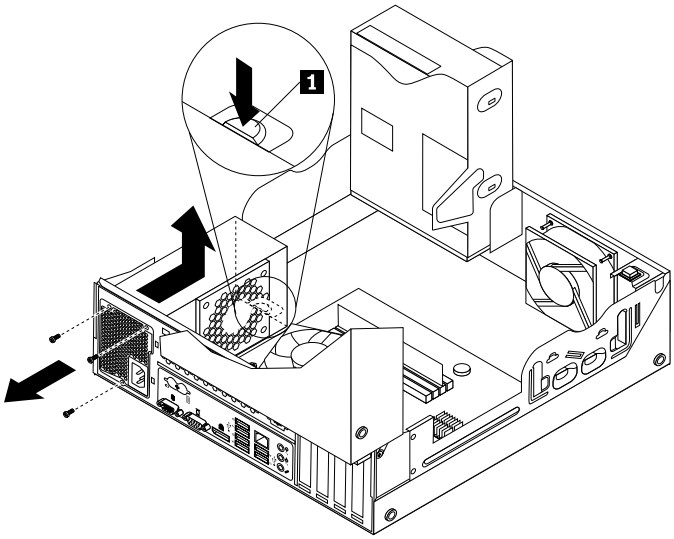


Figure 82. Removing the power supply assembly

8. Make sure that the new power supply assembly is the correct replacement.
9. Install the new power supply assembly into the chassis so that the screw holes in the new power supply assembly are aligned with the corresponding holes in the rear of the chassis. Then, install the three screws to secure the new power supply assembly in place.

   Note: Use only screws provided by Lenovo.

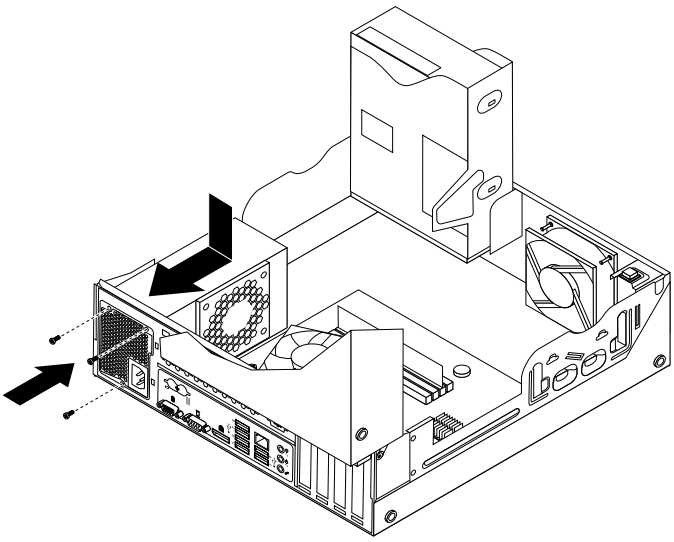


Figure 83. Installing the power supply assembly

10. Connect the new power supply assembly cables to all drives and the system board. See “Locating parts on the system board” on page 77.

11. Lower and position the heat sink fan duct on the top of the heat sink and fan assembly until the two screw holes in the heat sink fan duct are aligned with those in the heat sink and fan assembly. Install the two screws to secure the heat sink fan duct.

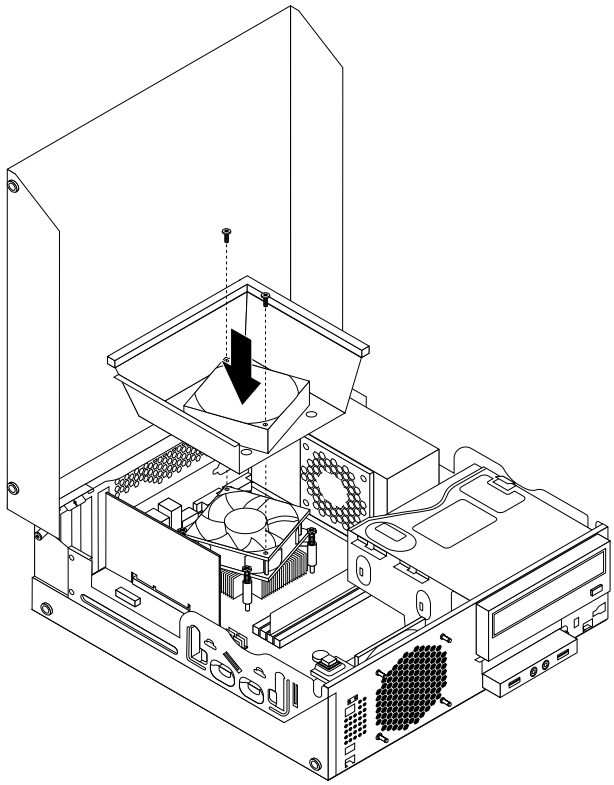


Figure 84. Installing the heat sink fan duct

12. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Replacing the microprocessor

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the microprocessor.

CAUTION:



The heat sink and microprocessor might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To replace the microprocessor, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See “Opening the computer cover” on page 121.

3. Locate the system board and disconnect all cables connected to the system board. See “Locating parts on the system board” on page 77.
4. Remove the heat sink and fan assembly with the fan duct. See “Replacing the heat sink and fan assembly” on page 139.

   Note: Do not let the thermal grease on the bottom of the heat sink and fan assembly get in contact with anything.
5. Lift the small handle **1** and open the retainer **2** to access the microprocessor **3**.

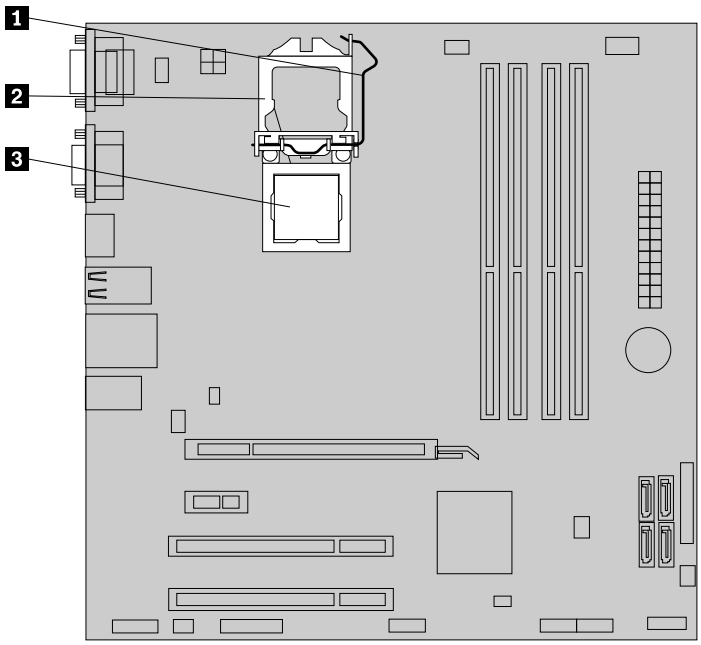


Figure 85. Accessing the microprocessor

6. Lift the microprocessor straight up and out of the microprocessor socket.

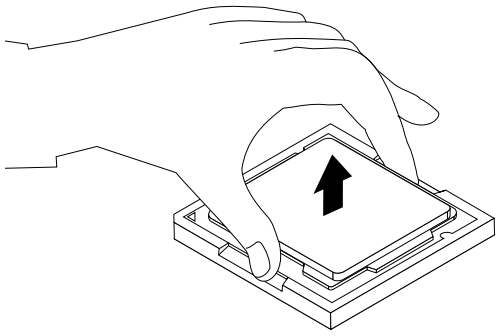
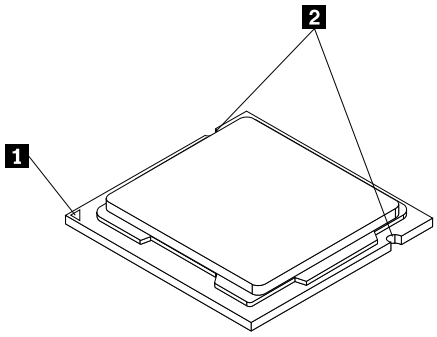


Figure 86. Removing the microprocessor

Notes:

a. Your microprocessor and socket might look different from the one illustrated.

b. Note the orientation of the microprocessor in the socket. You can either look for the small triangle 1 on one corner of the microprocessor or note the orientation of the notches 2 on the microprocessor. This is important when installing the new microprocessor on the system board.



c. Touch only the edges of the microprocessor. Do not touch the gold contacts on the bottom.

d. Do not drop anything onto the microprocessor socket while it is exposed. The socket pins must be kept as clean as possible.

7. Make sure that the small handle is in the raised position and the microprocessor retainer is fully open.
8. Remove the protective cover that protects the gold contacts of the new microprocessor.
9. Hold the new microprocessor by its sides and align the small triangle on one corner of the new microprocessor with the corresponding small triangle on one corner of the microprocessor socket.
10. Lower the new microprocessor straight down into the microprocessor socket on the system board.

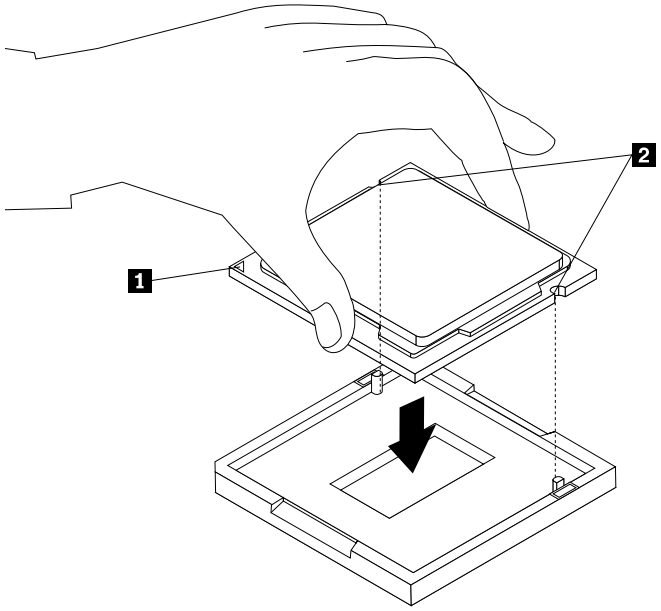


Figure 87. Installing the microprocessor

11. Close the microprocessor retainer and lock it into position with the small handle to secure the new microprocessor in the socket.

12. Reinstall the heat sink and fan assembly with the fan duct as shown. See “Replacing the heat sink and fan assembly” on page 139.

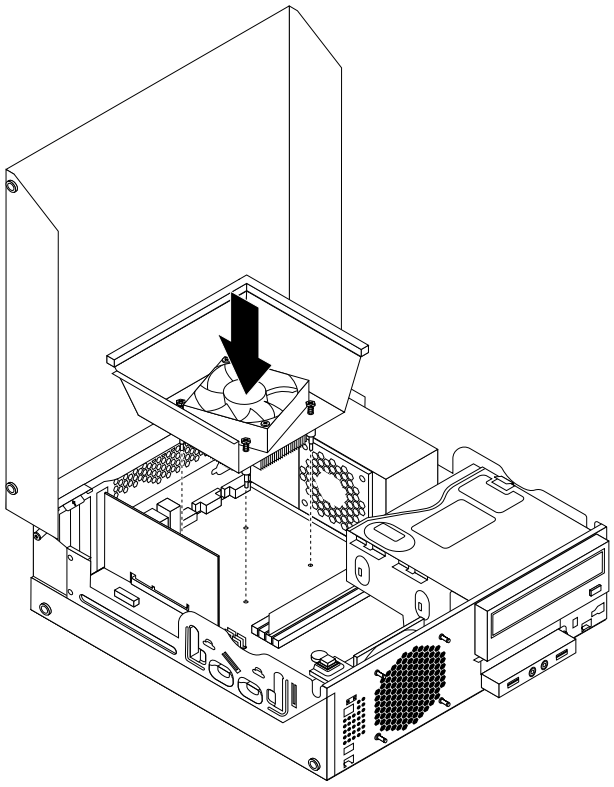


Figure 88. Reinstalling the heat sink and fan assembly with the fan duct

13. Reconnect all cables that were disconnected from the system board.
14. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Replacing the system board

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the system board.

CAUTION:



The heat sink and microprocessor might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before opening the computer cover.

To replace the system board, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 122.

4. Remove the hard disk drive. See “Replacing the hard disk drive” on page 134.
5. Pivot the optical drive bay assembly upward to gain access to the system board. See “Accessing the system board components and drives” on page 124.
6. Remove all memory modules and PCI cards that are currently installed. See “Installing or replacing a memory module” on page 125 and “Installing or replacing a PCI card” on page 126.
7. Remove the heat sink and fan assembly from the failing system board. See “Replacing the heat sink and fan assembly” on page 139.
8. Carefully take note of the location of all cable connections on the system board and disconnect all the cables. See “Locating parts on the system board” on page 119.
9. Remove the eight screws that secure the system board.

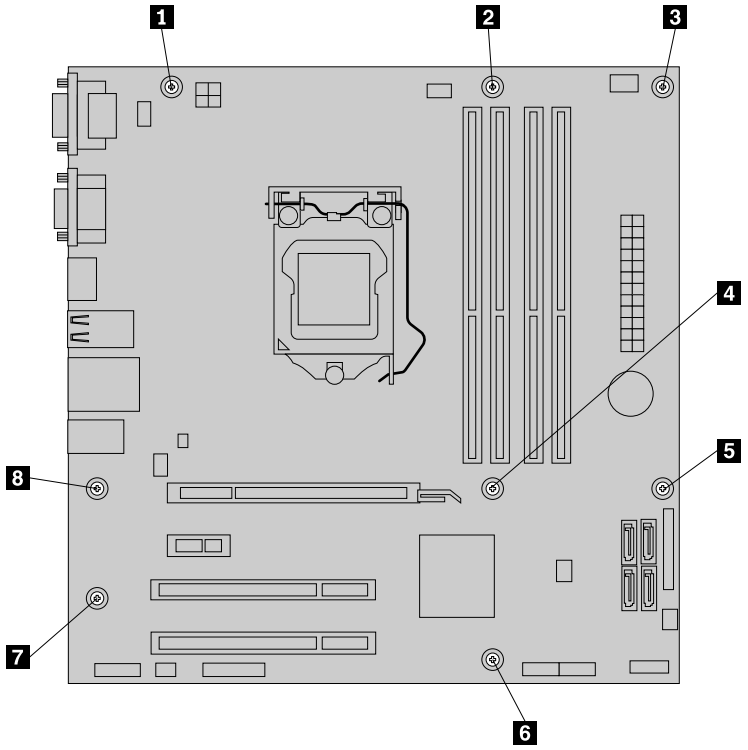


Figure 89. Removing the eight screws that secure the system board

10. Lift the system board out of the chassis.
11. Remove the microprocessor from the failing system board and install it on the new system board. See “Replacing the microprocessor” on page 147.
12. Install the new system board into the chassis by aligning the eight mounting studs in the chassis with the corresponding holes in the new system board. Then, install the eight screws to secure the system board.
13. Install the heat sink and fan assembly and connect the heat sink and fan assembly cable to the new system board. See “Replacing the heat sink and fan assembly” on page 139.
14. Install all memory modules and PCI cards removed from the failing system board on the new system board. See “Installing or replacing a memory module” on page 125 and “Installing or replacing a PCI card” on page 126.
15. Reconnect all remaining cables to the system board. See “Locating parts on the system board” on page 119.

16. Lower the optical drive bay assembly. See “Accessing the system board components and drives” on page 124.
17. Install the hard disk drive. See “Replacing the hard disk drive” on page 134.
18. To complete the replacement, go to “Completing the parts replacement” on page 113.

The failing system board must be returned with a microprocessor socket cover to protect the pins during shipping and handling.

To install the microprocessor socket cover, do the following:

1. Release the lever securing the microprocessor retainer and open the retainer to access the microprocessor.
2. Grasp the microprocessor on the sides and lift it straight up and out of the socket. Do not touch the contacts on the microprocessor socket.
3. Note the orientation of the socket cover. Align the notches 1 of the microprocessor socket cover with the alignment keys 2 of the microprocessor socket.
4. Install one side of the socket cover into the microprocessor socket as shown.

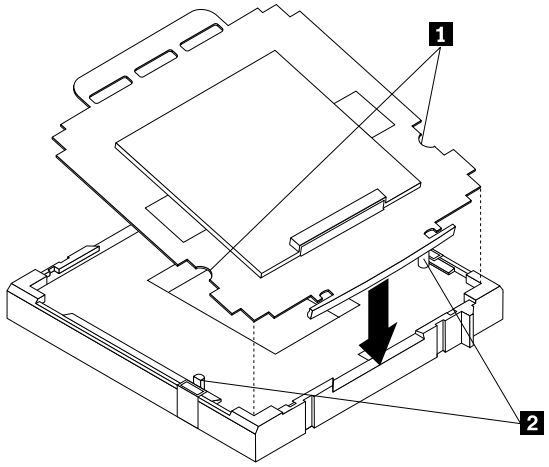


Figure 90. Installing the socket cover

Note: Your microprocessor socket and cover might look slightly different from the illustration.

5. Carefully press the other side of the socket cover downwards until the socket cover snaps into place.

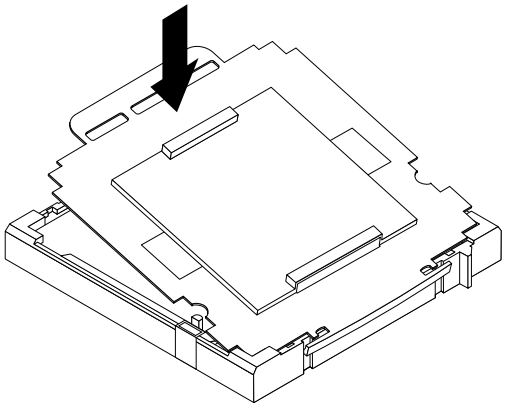


Figure 91. Securing the socket cover

6. Carefully check the four corners of the socket cover to make sure that the cover is secured in the microprocessor socket.
7. Lower the microprocessor retainer and then lower the lever to secure the retainer. Make sure the lever is locked into position.
8. Follow any additional instructions included with the replacement part you received.

Replacing the system fan assembly

Attention:
Do not open your computer or attempt any repair before reading and understanding the "Important safety information" in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the system fan assembly.

To replace the system fan assembly, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See "Opening the computer cover" on page 121.
3. Remove the hard disk drive. See "Replacing the hard disk drive" on page 134.
4. Locate the system fan assembly. See "Locating components" on page 118.
5. Disconnect the system fan assembly cable from the system fan connector on the system board. See "Locating parts on the system board" on page 77.

6. The system fan assembly is attached to the chassis by four rubber mounts. Remove the system fan assembly by cutting the rubber mounts and lifting the system fan assembly out of the chassis.

   Note: The new system fan assembly will have four new rubber mounts attached.

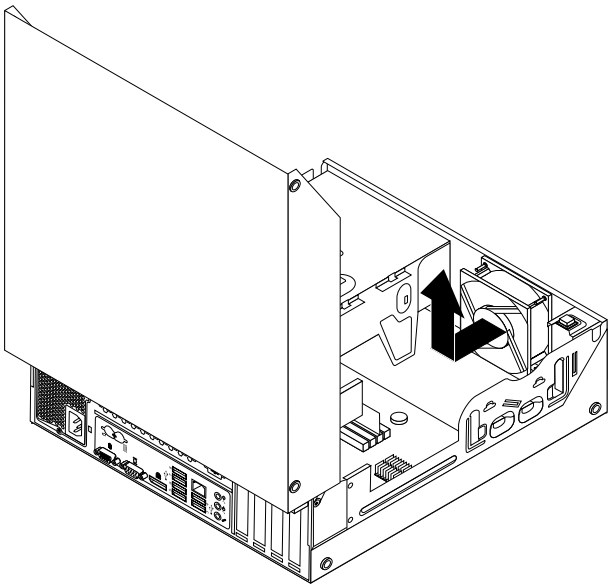


Figure 92. Removing the system fan assembly

7. Install the new system fan assembly by aligning the new rubber mounts that came with the new system fan assembly with the corresponding holes in the chassis, and then push the rubber mounts through the holes. Then, carefully pull on the tips of the rubber mounts from the bottom until the new system fan assembly is secured in place.

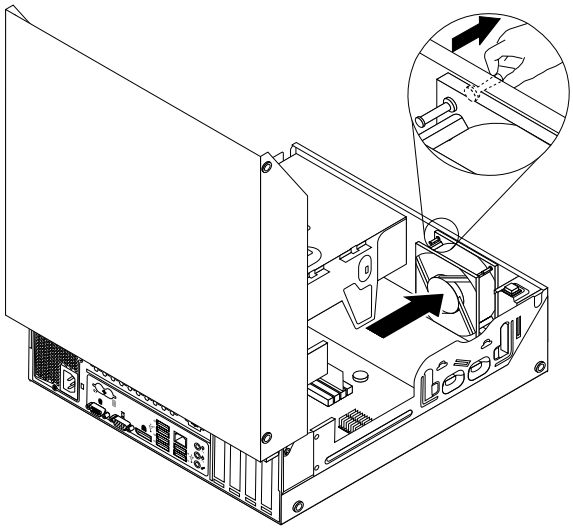


Figure 93. Installing the system fan assembly

8. Connect the new system fan assembly cable to the system fan connector on the system board. See “Locating parts on the system board” on page 77.

9. Reinstall the hard disk drive. See “Replacing the hard disk drive” on page 134.
10. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Replacing the internal speaker

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the internal speaker.

Note: The internal speaker is only available in some models.

To replace the internal speaker, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Remove the front bezel by releasing the three plastic tabs and pivoting the front bezel outward.

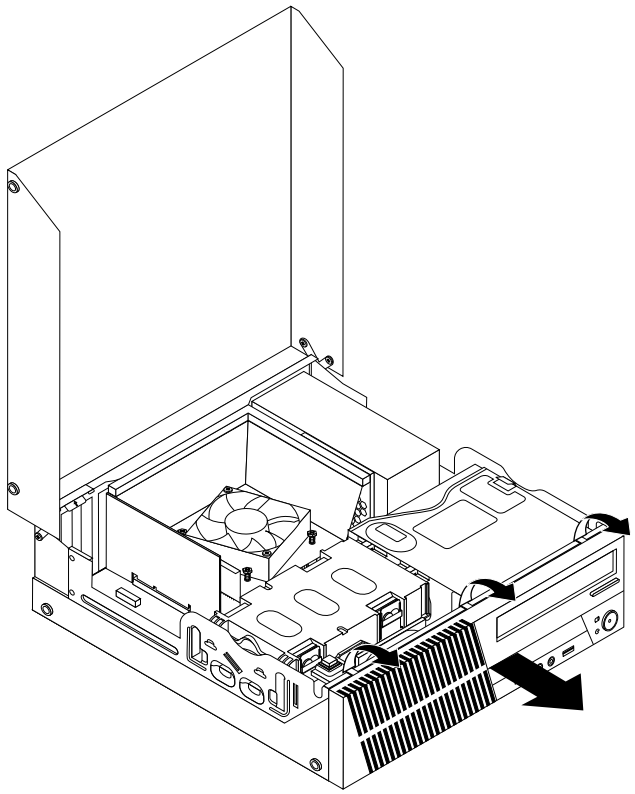


Figure 94. Removing the front bezel

4. Locate the internal speaker. See “Locating components” on page 118.
5. Disconnect the internal speaker cable from the internal speaker connector on the system board. See “Locating parts on the system board” on page 77.

6. Remove the screw that secures the cover presence switch (intrusion switch) and remove the cover presence switch from the chassis.

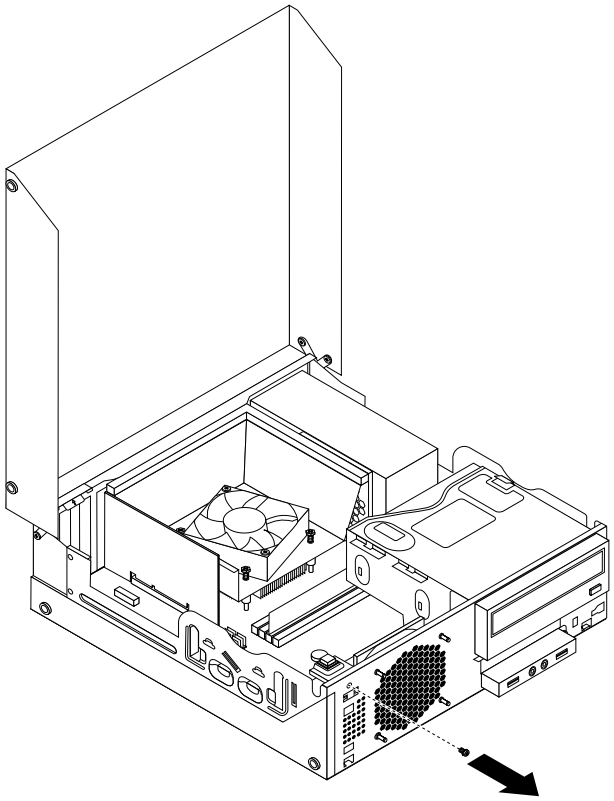


Figure 95. Removing the cover presence switch

7. Push the internal speaker outward through the hole **1** to disengage it from the two metal tabs on the chassis. Then, slide the internal speaker to the right to remove it from the chassis.

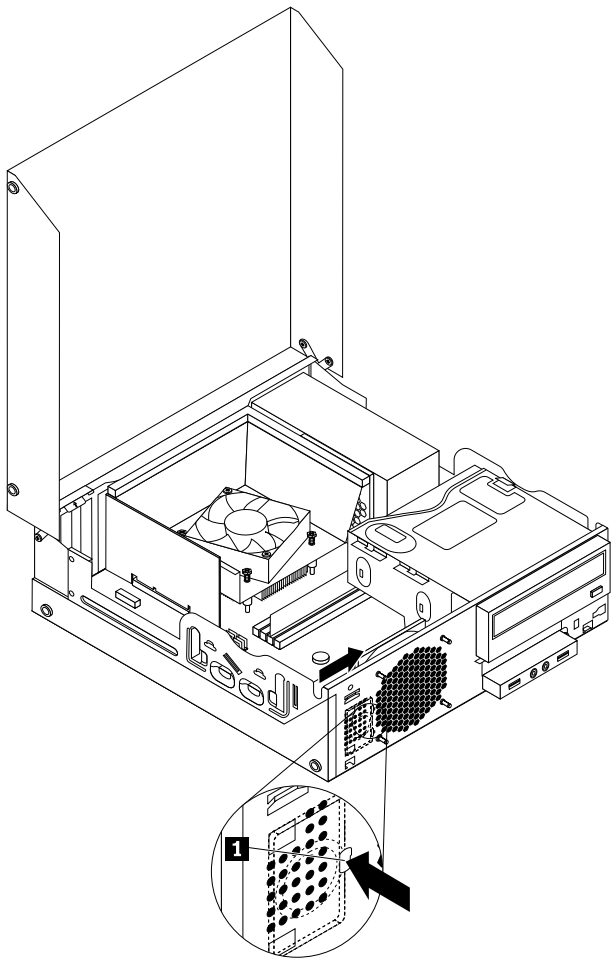


Figure 96. Removing the internal speaker

8. Align the new internal speaker with the two metal clips on the chassis, and then slide the speaker as shown until it snaps into position.

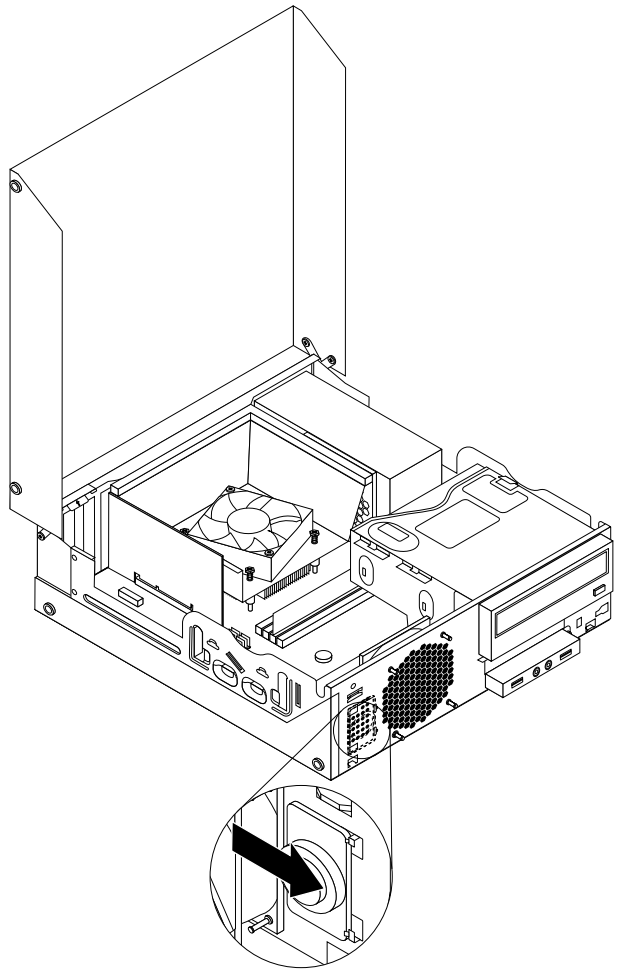


Figure 97. Installing the new internal speaker

9. Reconnect the internal speaker cable to the system board. See “Locating parts on the system board” on page 77.
10. Position the cover presence switch so that the screw hole in the cover presence switch is aligned with the corresponding hole in the chassis.

11. Install the screw to secure the cover presence switch to the chassis.

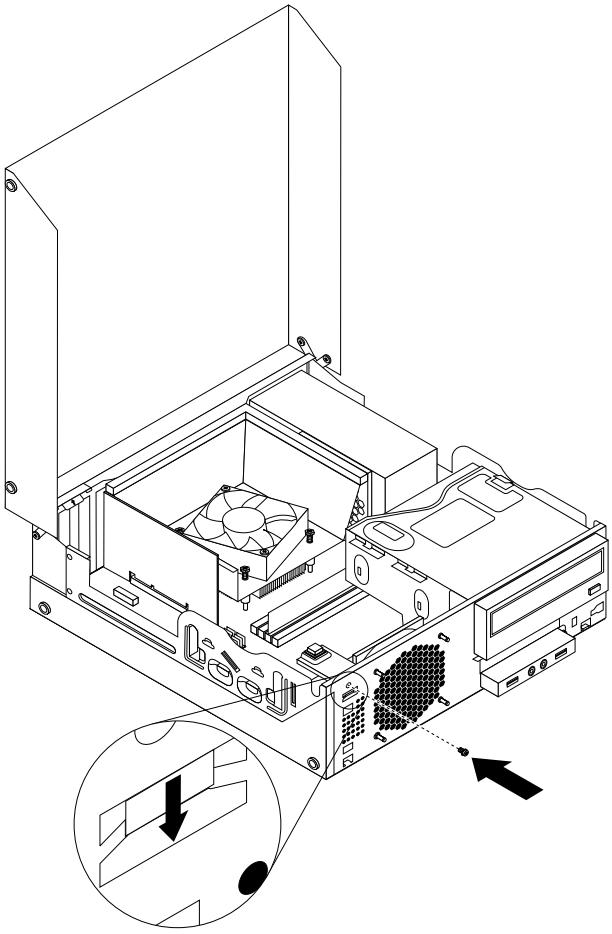


Figure 98. Reinstalling the cover presence switch

12. To reinstall the front bezel, align the three tabs on the front bezel with the corresponding holes in the chassis and pivot the front bezel inwards until it snaps into position.
13. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Replacing the front audio and USB assembly

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre User Guide*. To obtain a copy of the *ThinkCentre User Guide*, go to:
http://www.lenovo.com/ThinkCentreUserGuides

This section provides instructions on how to replace the front audio and USB assembly.

To replace the front audio and USB assembly, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Open the computer cover. See “Opening the computer cover” on page 121.
3. Remove the front bezel. See “Removing and reinstalling the front bezel” on page 122.

4. Pivot the optical drive bay upward and disconnect the front audio and USB assembly cables from the system board and note the cables routing. See “Locating parts on the system board” on page 77.
5. Remove the screw that secures the front audio and USB assembly bracket. Then remove the front audio and USB assembly bracket from the chassis.

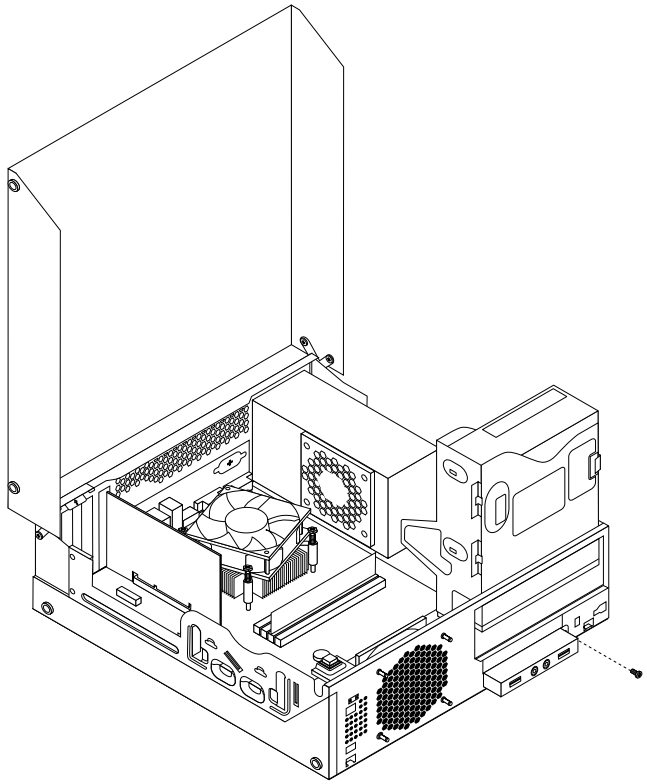


Figure 99. Removing the front audio and USB assembly

6. Remove the two screws that secure the front audio and USB assembly to its bracket. Then remove the failing front audio and USB assembly from the bracket.
7. Install a new front audio and USB assembly into the bracket and install the two screws to secure the front audio and USB assembly to the bracket.
8. Install the front audio and USB assembly bracket to the chassis and align the screw hole in the bracket with the corresponding hole in the chassis.
9. Install the screw to secure the front audio and USB assembly bracket to the chassis.
10. Reconnect the front USB and front audio cables to the system board. See “Locating parts on the system board” on page 77.
11. Reinstall the front bezel. See “Removing and reinstalling the front bezel” on page 122.
12. To complete the installation or replacement, go to “Completing the parts replacement” on page 160.

Completing the parts replacement

After completing the installation or replacement for all parts, you need to close the computer cover and reconnect cables. Depending on the parts you installed or replaced, you might need to confirm the updated information in the Setup Utility program. Refer to Chapter 6 “Using the Setup Utility program” on page 43.

To close the computer cover and reconnect cables to your computer, do the following:

1. Make sure that all components have been reassembled correctly and that no tools or loose screws are left inside your computer. See “Locating components” on page 76 for the locations of various components in your computer.
2. If you have removed the front bezel, reinstall it. To reinstall the front bezel, align the three tabs on the front bezel with the corresponding holes in the chassis and pivot the front bezel inwards until it snaps into position.
3. Make sure that the cables are routed correctly. Keep cables clear of the hinges and sides of the computer chassis to avoid interference with closing the computer cover.
4. Lower the optical drive bay.
5. Close the computer cover.
6. If there is an integrated cable lock available, lock the computer.
7. Reconnect the external cables and power cords to the computer. See “Locating connectors on the rear of your computer” on page 75.
8. To update your configuration, see Chapter 6 “Using the Setup Utility program” on page 43.

Note: In most areas of the world, Lenovo requires the return of the defective Field Replaceable Units (FRUs). Information about this will come with the new FRUs or will come a few days after you receive the new FRUs.

Chapter 10. FRU lists

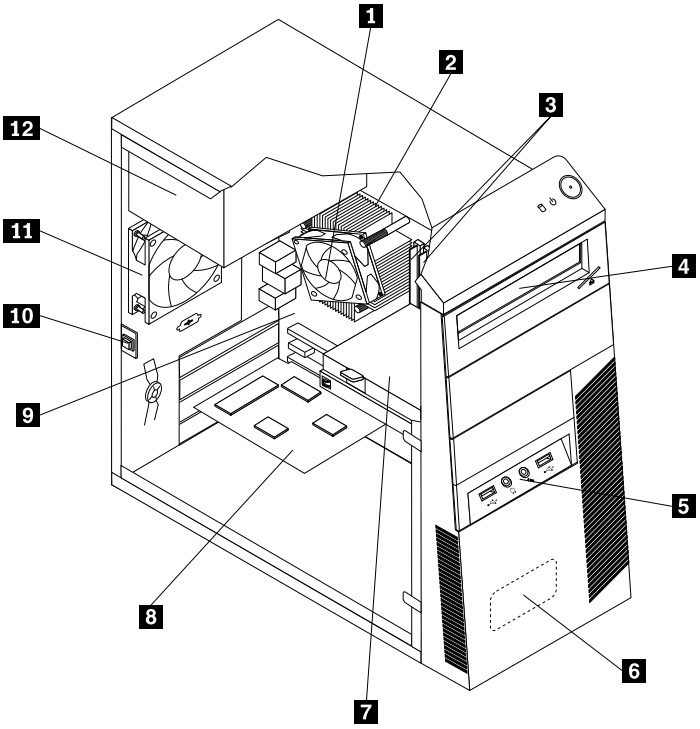
This chapter lists the information on the field replaceable units (FRUs).

Attention: Be sure to read and understand all the safety information before replacing any FRUs.

Note: In the following tables, a customer replaceable unit (CRU) is identified as either "1", "2", or "N" in the **CRU** column. "N" means that the part is not a CRU, "1" means that the part is a Self-service CRU, and "2" means that the part is an Optional-service CRU.

Overall: MT 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178

The following replaceable components are available for the 4468, 4473, 4476, 4479, 4495, 4497, 4499, 4504, 4513, 4517, 4524, 7021, 7032, 7034, 7049, 7052, 7053, 7073, 7136, and 7178 machine type models.



Item #	FRUs	FRU #	CRU
1	Heat sink, Tamdhu IV Intel LGA1156 65w/73w cooler kit • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models	03T9695	2

© Copyright Lenovo 2011, 2012

Item #	FRUs	FRU #	CRU
	• MT 7136: all models • MT 7178: all models		
1	Heat sink, Tamdhu IV Intel LGA1156 65w/73w cooler kit • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	03T9513	N
2	Microprocessor, Ci3 2100 SANDY BRIDGE stepping Q0 3MB 2c FCLGA 3.1GHZ 65W • MT 4479: A1S A1Y • MT 4504: A1G A2G A3G • MT 4513: • MT 4517: A4H A5S A5D A5Y A5H A5V A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A9G B1G A6V A7V A8V A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B5H B6V B7J B8J • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: A2G • MT 7178:	03T8011	N
2	Microprocessor, Ci3 2120 SANDY BRIDGE stepping Q0 3MB 2c FCLGA 3.3GHz 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: B9M C1M C2M C8G C9A C9T • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8010	N

Item #	FRUs	FRU #	CRU
2	Microprocessor, Ci7 2600 SANDY BRIDGE stepping D2 8MB 4c FCLGA 3.4GHZ 95W • MT 4479: • MT 4504: • MT 4513: A3G A4G A6G A8G • MT 4517: • MT 4524: A8H A4G C8M B1A B1T B2A B2T B4A B4T B5J B6J D3G D4G C4V C5V E2U E2F E2S E3U E3F E3S E7U E7F E7S E9J F1J G3P G4P • MT 7034: • MT 7052: A6S A6Y A4G A8U A8F A8S B1S B1D B1Y B2U B2F B2S B3U B3F B3S • MT 7053: • MT 7136: • MT 7178: A2G A3G	03T8012	N
2	Microprocessor, Ci5 2500 SANDY BRIDGE stepping D2 6MB 4c FCLGA 3.3GHz 95W • MT 4479: • MT 4504: • MT 4513: A5G • MT 4517: • MT 4524: A5G C6M A9A A9T B3A B3TD7H E1U E1F E1S E1P E1L E1D E1Y E4G E6M E8S E8D E8Y F7P F8P F9M • MT 7034: • MT 7052: A3G B4U B4F B4S B6U B6S B6F B8U B8F B8S • MT 7053: • MT 7136: • MT 7178:	03T8013	N
2	Microprocessor, Ci5 2400 SANDY BRIDGE stepping D2 6MB 4c FCLGA 3.1GHZ 95W • MT 4479: • MT 4504: • MT 4513: A1G A2G A7G • MT 4517: • MT 4524: A6H A7H B9S B9D B9Y B9V A2A A2T A2B A2H A2V A2K A2R A3Q C7MC9M D5P D6P B7J B8J D1G D2G C1V C2V C3V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D8J D9J E5M F2J F3J F4P F5P F6P G1MG2P G5M • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7052: A5S A5Y A7U A7F A7S A9G B5S B5U B5F C2U C2S C2F C3U C3F C3S • MT 7053: • MT 7136:	03T8014	N

Item #	FRUs	FRU #	CRU
	• MT 7178: A1G		
2	Microprocessor, Ci5 2300 SANDY BRIDGE stepping D2 6MB 4c FCLGA 2.8GHZ 95W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8035	N
2	Microprocessor, Ci7 2600S SANDY BRIDGE stepping D2 8MB 4c FCLGA 2.8GHZ 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: B7U B7S B7F B9U B9S B9FC1G C4U C4F C4S • MT 7053: • MT 7136: • MT 7178:	03T8015	N
2	Microprocessor, Ci5 2500S SANDY BRIDGE stepping D2 6MB 4c FCLGA 2.7GHZ 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8016	N

Item #	FRUs	FRU #	CRU
2	Microprocessor, Ci5 2400S SANDY BRIDGE stepping D2 6MB 4c FCLGA 2.5GHZ 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8017	N
2	Microprocessor, G620 SANDY BRIDGE stepping Q-0 3MB 2c FCLGA 2.6GHz 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: C6M • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T6226	N
2	Microprocessor, G840 SANDY BRIDGE stepping Q-0 3 MB 2c FCLGA 2.8GHz 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: C3A C3T C4G C4V C5V C7M • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T6225	N

Item #	FRUs	FRU #	CRU
2	Microprocessor, G850 SANDY BRIDGE stepping Q-0 3MB 2c FCLGA 2.9GHz 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: D2M • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T6224	N
2	Microprocessor, Core i3-2125 SANDY BRIDGE, 3MB J-1 2C/4T 3.30 GHz, 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8357	N
2	Microprocessor, Core i3-2130 SANDY BRIDGE, 3MB Q-0 2C/4T 3.40 GHz, 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8358	N

Item #	FRUs	FRU #	CRU
2	Microprocessor, Core i5-2320 SANDY BRIDGE, 6MB D-2 4C/4T 3.00 GHz, 95W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8359	N
2	Microprocessor, G630 SANDY BRIDGE, 3MB, Q-0 2C/2T 2.7GHz, 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: D1A D1T • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8360	N
2	Microprocessor, G860 SANDY BRIDGE, 3MB, Q-0 2C/2T 3.0GHz, 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8361	N

Item #	FRUs	FRU #	CRU
2	Microprocessor, G540 SANDY BRIDGE 2MB Q-0 2c FCLGA 2.5GHz 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8354	N
2	Microprocessor, G530 SANDY BRIDGE 2MB Q-0 2c FCLGA 2.5GHz 65W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8356	N
2	Microprocessor, G440 SANDY BRIDGE 1MB Q-0 1c FCLGA 1.6GHz 35W • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8355	N

Item #	FRUs	FRU #	CRU
3	Memory module, 1GB PC3-10600 1333MHz DDR3 UDIMM • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	64Y6648	1
3	Memory module, 2GB PC3-10600 1333MHz DDR3 UDIMM • MT 4479: A1S A1Y • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G • MT 4517: A4H A5S A5D A5Y A5H A5V A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A9G B1G A6V A7V A8V A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B5H B6V B7J B8J B9M C3A C3T C4G C4V C5V C6M C8G C9A C9T D1A D1T • MT 4524: B9S B9D B9Y B9V A2A A2T A2B A2H A2V A2K A2R A3Q A4G A5G C9M A9A A9T B1A B1T B3A B3T B4A B4T D5P D6P D1G D2G D3G D4G C1V C2V C3V C4V C5V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D7H E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E8S E8D E8Y F5P F8P G2P G3P • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J • MT 7052: A5S A5Y A6S A6Y A3G A4G B1S B1D B1Y B5S B5F B5U • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	64Y6649	1
3	Memory module, 4GB PC3-10600 1333MHz DDR3 UDIMM • MT 4479: • MT 4504: • MT 4513: A8G • MT 4517: C1M C2M C7M D2M • MT 4524: A6H A7H A8H C6M C7M C8M B2A B2T B5J B6J B7J B8J D8J D9J E3U E3F E3S E4G E5M E6M E7U E7F E7S E9J F1J F2J F3J F4P F6P F7P F9M G1M G4PG5M • MT 7034: A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7052: A7U A7F A7S A8U A8F A8S A9G B2U B2F B2S B3U B3F B3S B4U B4F B4SB6U B6S B6F B7U B7S B7F	89Y9224	1

Item #	FRUs	FRU #	CRU
	B8U B8S B8F B9U B9S B9F C1G C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: • MT 7178:		
4	Optical drive, DVD-ROM drive - 16x/48x - SATA • MT 4479: • MT 4504: • MT 4513: • MT 4517: A4H A6V B6V B8J C5V C6M • MT 4524: A6H B6J B8J C1V C2V C4V F1J F3J • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	71Y5543	1
4	Optical drive, DVD recorder rambo 8 - SATA 12XRAM write • MT 4479: A1S A1Y • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A5S A5D A5Y A5H A5V A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A9G B1G A7V A8V A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B5H B7J B9M C1M C2M C3A C3T C4G C4V C7M C8G C9A C9T D1A D1T D2M • MT 4524: A7H A8H B9S B9D B9Y B9V A2A A2T A2B A2H A2V A2K A2R A3Q A4G A5G C6M C7M C8M C9M A9A A9T B1A B1T B2A B2T B3A B3T B4A B4T D5P D6P B5J B7J D1G D2G D3G D4G C3V C5V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D7H E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E3U E3F E3S E4G E5M E6M E7U E7F E7S E8S E8D E8Y E9J F2J F4P F5P F6P F7P F8P F9M G1M G2P G3P G4P G5M • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7052: A5S A5Y A6S A6Y A3G A4G A7U A7F A7S A8U A8F A8S A9G B1S B1D B1Y B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F C1G C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	71Y5545	1

Item #	FRUs	FRU #	CRU
4	Optical drive, Blu-ray recordable • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	71Y5547	1
7	Hard disk drive, SATA 250GB 7200RPM/3Gb/8M • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A7G • MT 4517: A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B9M C3A C3T C6M C9A C9T D1A D1T • MT 4524: C6M C7M C9M A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J G5M • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J • MT 7052: A3G C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: • MT 7178:	40Y9036	1
7	Hard disk drive, SATA 250GB 7200RPM/3Gb/8M • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A7G • MT 4517: A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B9M C3A C3T C6M C9A C9T D1A D1T • MT 4524: C6M C7M C9M A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J G5M • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J • MT 7052: A3G C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: • MT 7178:	45K0408	1

Item #	FRUs	FRU #	CRU
7	Hard disk drive, SATA 320GB 7200 RPM/3Gb/8M • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: • MT 4517: A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A6V A7V B7J B8J C1M C5V C7M D2M • MT 4524: A2A A2T A2B A2H A2V A2K A2R A3Q A5G A9A A9T B1A B1T D5P D6P C1V C2V C4V E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E3U E3F E3S F4P F5P G1M • MT 7034: A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7052: A4G B5S B5F B5U • MT 7053: • MT 7136: • MT 7178:	87H4891	1
7	Hard disk drive, SATA 320GB 7200 RPM/3Gb/8M • MT 4479: • MT 4513: • MT 4517: A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A6V A7V B7J B8J C1M C5V C7M D2M • MT 4524: A2A A2T A2B A2H A2V A2K A2R A3Q A5G A9A A9T B1A B1T D5P D6P C1V C2V C4V E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E3U E3F E3S F4P F5P G1M • MT 7034: A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7052: A4G B5S B5F B5U • MT 7053: • MT 7136: • MT 7178:	45K0409	1
7	Hard disk drive, SATA 500GB 7200RPM/3Gb/16M • MT 4479: A1S A1Y • MT 4513: A1G A2G A3G A4G A5G A6G A8G • MT 4517: A4H A5S A5D A5Y A5H A5V A9G B1G A8V B5H B6V C2M C4G C4V C8G • MT 4524: A6H A7H A8H B9S B9D B9Y B9V A4G C8M B2A B2T B3A B3T B4A B4T B5J B6J B7J B8JD1G D2G D3G D4G C3V C5V D7H D8J D9J E4G E5M E6M E7U E7F E7S E8S E8D E8Y E9J F1J F2J F3J F6P F7P F8P F9MG2P G3P G4P • MT 7034: • MT 7052: A5S A5Y A6S A6Y A7U A7F A7S A8U A8F A8S A9G B1S B1D B1Y B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F • MT 7053: • MT 7136: A2G	41X5582	1

Item #	FRUs	FRU #	CRU
	• MT 7178: A1G A2G A3G		
7	Hard disk drive, SATA 500GB 7200RPM/3Gb/16M • MT 4479: A1S A1Y • MT 4513: A1G A2G A3G A4G A5G A6G A8G • MT 4517: A4H A5S A5D A5Y A5H A5V A9G B1G A8V B5H B6V C2M C4G C4V C8G • MT 4524: A6H A7H A8H B9S B9D B9Y B9V A4G C8M B2A B2T B3A B3T B4A B4T B5J B6J B7J B8JD1G D2G D3G D4G C3V C5V D7H D8J D9J E4G E5M E6M E7U E7F E7S E8S E8D E8Y E9J F1J F2J F3J F6P F7P F8P F9MG2P G3P G4P • MT 7034: • MT 7052: A5S A5Y A6S A6Y A7U A7F A7S A8U A8F A8S A9G B1S B1D B1Y B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	45K0410	1
7	Hard disk drive, SATA 1TB 7200RPM/3Gb/32M • MT 4479: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	45K0412	1
7	Hard disk drive, 2.5 inch SSD 160G SSD • MT 4479: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J • MT 7052: • MT 7053: • MT 7136: • MT 7178:	45K0616	1

Item #	FRUs	FRU #	CRU
7	Hard disk drive, 2.5 inch 300G 10K RPM hard disk drive • MT 4479: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7052: • MT 7053: • MT 7136: • MT 7178:	91Y1657	1
7	Hard disk drive, SATAIII 250GB 7200RPM/6Gb/16M • MT 4479: • MT 4513: A7G • MT 4517: A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B9M C3A C3T C6M C9A C9T D1A D1T • MT 4524: C6M C7M C9M A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J G5M • MT 7034: • MT 7052: C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: • MT 7178:	03T7039	1
7	Hard disk drive, SATAIII 320GB 7200RPM/6Gb/16M • MT 4479: • MT 4513: • MT 4517: A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A6V A7V B7J B8J C1M C5V C7M D2M • MT 4524: A2A A2T A2B A2H A2V A2K A2R A3Q A5G A9A A9T B1A B1T D5P D6P C1V C2V C4V E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E3U E3F E3S F4P F5P G1M • MT 7034: • MT 7052: A4G B5S B5F B5U • MT 7053: • MT 7136: • MT 7178:	03T7040	1

Item #	FRUs	FRU #	CRU
7	Hard disk drive, SATAIII 500GB 7200RPM/6Gb/16M • MT 4479: A1S A1Y • MT 4513: A1G A2G A3G A4G A5G A6G A8G • MT 4517: A4H A5S A5D A5Y A5H A5V A9G B1G A8V B5H B6V C2M C4G C4V C8G • MT 4524: A6H A7H A8H B9S B9D B9Y B9V A4G C8M B2A B2T B3A B3T B4A B4T B5J B6J B7J B8JD1G D2G D3G D4G C3V C5V D7H D8J D9J E4G E5M E6M E7U E7F E7S E8S E8D E8Y E9J F1J F2J F3J F6P F7P F8P F9MG2P G3P G4P • MT 7034: • MT 7052: A5S A5Y A6S A6Y A7U A7F A7S A8U A8F A8S A9G B1S B1D B1Y B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	03T7041	1
7	Hard disk drive, SATAIII 1TB 7200RPM/6Gb/32M • MT 4479: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: A5S A5Y A6S A6Y A7U A7F A7S A8U A8F A8S A9GC1G • MT 7053: • MT 7136: • MT 7178:	03T7042	1
8	HD6450 DVI+DP ATX • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8148	2

Item #	FRUs	FRU #	CRU
8	NVIDIA Quadro FX380 (DVI + DP) ATX • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	64Y8204	2
8	NVIDIA QUAPRO NVS300 512MB 64BIT DMS59 ATX • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T8152	2
8	Geforce 310 512M 64BIT DVI+DP ATX • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T9008	2

Item #	FRUs	FRU #	CRU
9	System board, Intel Q67 planar GA level- without LAN surge and TCM header planar_special bid-Russia only • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G E4G • MT 7034: A1G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	03T6004	N
9	System board, Intel Q67 Planar - ATX (Foxconn)(SPI) • MT 4479: A1S A1Y • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A4H A5S A5D A5Y A5H A5V A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A9G B1G A6V A7V A8V A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B5H B6V B7J B8J B9M C1M C2M C3A C3T C4G C4V C5V C6M C7M C8G C9A C9T D1A D1T D2M • MT 4524: A6H A7H A8H B9S B9D B9Y B9V A2A A2T A2B A2H A2V A2K A2R A3Q A4G A5G C6M C7M C8M C9M A9A A9T B1A B1T B2A B2T B3A B3T B4A B4T D5P D6P B5J B6J B7J B8J D1G D2G D3G D4G C1V C2V C3V C4V C5V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D7H D8J D9J E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E3U E3F E3S E4G E5M E6M E7U E7F E7S E8S E8D E8Y E9J F1J F2J F3J F4P F5P F6P F7P F8P F9M G1MG2P G3P G4P G5M • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L • MT 7052: A5S A5Y A6S A6Y A3G A4G A7U A7F A7S A8U A8F A8S A9G B1S B1D B1Y B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F C1G C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	03T6560	N

Item #	FRUs	FRU #	CRU
10	FRU, Intrusion switch assembly • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	41R6116	2
11	Tamdhu IV 9225 rear fan (without fan grille) • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	43K6340	2
12	Power supply, 280W ATX power supply-Standard, Robust (manual switch) • MT 4479: A1S A1Y • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A4H A5S A5D A5Y A5H A5V A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A9G B1G A6V A7V A8V A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B5H B6V B7J B8J B9M C1M C2M C3A C3T C4G C4V C5V C6M C7M C8G C9A C9T D1A D1TD2M • MT 4524: A6H A7H A8H B9S B9D B9Y B9V A2A A2T A2B A2H A2V A2K A2R A3Q A4G A5G C6M C7M C8M C9M A9A A9T B1A B1T B2A B2T B3A B3T B4A B4T D5P D6P D1G D2G D3G D4G C1V C2V C3V C4V C5V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E D7H D8J D9J E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E3U E3F E3S E4G E5M E6M E7U E7F E7S E8S E8D E8Y E9J F1J F2J F3J F4P F5P F6P F7P F8P F9M G1MG2P G3P G4PG5M • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A • MT 7052: A5S A5Y A6S A6Y A3G A4G A7U A7F A7S A8U A8F A8S A9G B1S B1D B1Y B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F	45J9436	2

Item #	FRUs	FRU #	CRU
	B8U B8S B8F B9U B9S B9F C1G C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G		
12	Power supply, 280W ATX power supply (85plus)- Standard, Robust, Japan (tower) • MT 4479: A1S A1Y • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A4H A5S A5D A5Y A5H A5V A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A9G B1G A6V A7V A8V A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B5H B6V B7J B8J B9M C1M C2M C3A C3T C4G C4V C5V C6M C7M C8G C9A C9T D1A D1TD2M • MT 4524: A6H A7H A8H B9S B9D B9Y B9V A2A A2T A2B A2H A2V A2K A2R A3Q A4G A5G C6M C7M C8M C9M A9A A9T B1A B1T B2A B2T B3A B3T B4A B4T D5P D6P D1G D2G D3G D4G C1V C2V C3V C4V C5V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E D7H D8J D9J E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E3U E3F E3S E4G E5M E6M E7U E7F E7S E8S E8D E8Y E9J F1J F2J F3J F4P F5P F6P F7P F8P F9M G1MG2P G3P G4PG5M • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A • MT 7052: A5S A5Y A6S A6Y A3G A4G A7U A7F A7S A8U A8F A8S A9G B1S B1D B1Y B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F C1G C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	45J9431	2
12	Power supply, 320W ATX power supply (90plus) • MT 4479: A1S A1Y • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A4H A5S A5D A5Y A5H A5V A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A9G B1G A6V A7V A8V A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B5H B6V B7J B8J B9M C1M C2M C3A C3T C4G C4V C5V C6M C7M C8G C9A C9T D1A D1TD2M • MT 4524: A6H A7H A8H B9S B9D B9Y B9V A2A A2T A2B A2H A2V A2K A2R A3Q A4G A5G C6M C7M C8M C9M A9A A9T B1A B1T B2A B2T B3A B3T B4A B4T D5P D6P D1G D2G D3G D4G C1V C2V C3V C4V C5V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E D7H D8J D9J E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E3U E3F E3S E4G E5M E6M E7U	54Y8841	2

Item #	FRUs	FRU #	CRU
	E7F E7S E8S E8D E8Y E9J F1J F2J F3J F4P F5P F6P F7P F8P F9M G1MG2P G3P G4PG5M • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7052: A5S A5Y A6S A6Y A3G A4G A7U A7F A7S A8U A8F A8S A9G B1S B1D B1Y B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F C1G C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G		

Mechanical FRUs

The FRU, s listed in the following tables are not illustrated.

Mechanical	FRU #	CRU
FRU, Tamdhu IV 9225 front fan (with fan bracket) • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	43N9599	2
FRU, cable-SATA 250mm (RoHS) • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	54Y9929	2

Mechanical	FRU #	CRU
FRU, LED/switch cable_R (PCB_760mm_25L) kit • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45J9577	2
FRU, front I/O cable_NC_ESD_R (25L_A660_U280) • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45J9573	2
FRU, sensor cable (460mm) kit with bracket • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45J9495	2

Mechanical	FRU #	CRU
FRU, cabel-SATA 420mm with 2 latch • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	54Y9948	2
FRU, speaker cable_R_9*5_400mm • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	43N9091	2
FRU, optional hard disk driver bracket assembly, without 4 pin cable • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	41R6106	2

Mechanical	FRU #	CRU
FRU, FDD/Cardread blank bezel • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6261	2
FRU. 2nd optical disk driver cover assembly • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6265	1
FRU, second serial port cable (300mm) - with level shift IC • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	71Y6221	2

Mechanical	FRU #	CRU
FRU, C2 intrusion switch cable (included in the kit 41R6115) • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	39K5022	2
FRU, eSATA cable FH • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	41R3308	2
FRU, PS2 cable_R_170mm_knockout (with screw) • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	43N9149	2

Mechanical	FRU #	CRU
FRU, rear USB 2 ports II HP • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	42Y8005	2
FRU, parallel cable 280mm ROHS (optional) • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	43N9022	2
FRU, front fan used for 2*500G\1TB • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	43N9599	1

Mechanical	FRU #	CRU
FRU, SATA cable_R__370mm_no latch • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	43N9134	2
FRU, shield, 5.25 EMC • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	41N8080	2
FRU, side cover • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	41N8050	2

Mechanical	FRU #	CRU
FRU, hard disk driver tray • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	41R6291	2
FRU, front bezel base • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6258	2
FRU, top handle assembly • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6259	2

Mechanical	FRU #	CRU
FRU, USB cover • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6260	2
FRU, FDD/card reader cover • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6262	2
FRU, optical disk driver blank cover assembly • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6263	2

Mechanical	FRU #	CRU
FRU, 1st optical disk driver cover assembly • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6264	2
FRU, rear I/O shield, ATX, Q57, FOF, with USB number • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	43N9846	2
FRU, Tamdhu chassis primary hard disk driver cage • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6272	2

Mechanical	FRU #	CRU
FRU, Tamdhu ruber foot (for acoustic improvement) • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6278	2
FRU, front bezel with 1st optical disk driver bezel assmbly • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6367	2
FRU, cable clip FCW-29 • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6365	2

Mechanical	FRU #	CRU
FRU, retainer, card reader/hard disk driver/FDD • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6378	2
FRU, mechanical kit • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6377	2
FRU, 4 pin system fan • MT 4479: all models • MT 4504: all models • MT 4513: all models • MT 4517: all models • MT 4524: all models • MT 7034: all models • MT 7052: all models • MT 7053: all models • MT 7136: all models • MT 7178: all models	45K6340	2

Keyboard and Mouse

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
US English • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A4H A5H A2M A2A A2H A2R A3Q B2U A9G B1G A1U A1G A1M A1A A1Q B5H B9M C1M C2M C3A C6M C7M C9A D1A D2M • MT 4524: A6H A7H A8H A2A A2H A2R A3Q A4G A5G C6M C7M C8M C9M A9A B1A B2A B3A B4A D1G D2G D3G D4G A1U A1F A1G A1M A 1A A1Q A1H A1R A1E D7H E1U E1L E2U E3U E4G E5M E6M E7U F9M G1M G5M • MT 7034: A1U A1F A1L A1M A1A A1Q A1H A1R A1E A2U A2F A2L A2M A2A A2Q A2H A2R A2E • MT 7052: A3G A4G A7U A8U A9G B2U B3U B4U B5U B6U B7U B8U B9U C1G C2U C3U C4U • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5289	1
Arabic • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5290	1
A/F • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5291	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
B/F • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5292	1
Belgium English • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5293	1
Brazilian Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: B3P B4P A1P • MT 4524: D5P D6P A1P E1P F4P F5P F6P F7P F8P G2P G3P G4P • MT 7034: A1P A2P • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5294	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Bulgarian • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5295	1
Chinese/US • MT 4479: • MT 4504: • MT 4513: • MT 4517: A5V A2B A2V A6V A7V A8V B6V C4V C5V • MT 4524: B9V A2B A2V C1V C2V C3V C4V C5V A1V • MT 7034: A1C A2C • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5296	1
Czech (ABB) • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5297	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Danish • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5298	1
Dutch • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5299	1
French • MT 4479: • MT 4504: • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178: A1G A2G A3G	41A5300	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
French Canadian • MT 4479: • MT 4504: • MT 4513: • MT 4517: B2F A1F • MT 4524: A1F E1F E2F E3F E7F • MT 7034: A1F A2F • MT 7052: A7F A8F B2F B3F B4F B5F B6F B7F B8F B9F C2F C3F C4F • MT 7053: • MT 7136: • MT 7178:	41A5301	1
French Canadian • MT 4479: • MT 4504: • MT 4513: • MT 4517: B2F A1F • MT 4524: A1F E1F E2F E3F E7F • MT 7034: A1F A2F • MT 7052: A7F A8F B2F B3F B4F B5F B6F B7F B8F B9F C2F C3F C4F • MT 7053: • MT 7136: • MT 7178:	41A5302	1
German • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5303	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Greek • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5304	1
Greek/US • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5305	1
Hebrew • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5306	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Hungarian • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5307	1
Iceland • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5308	1
Italian • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5309	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: A1J B7J B8J • MT 4524: B5J B6J B7J B8J A1J D8J D9J E9J F1J F2J F3J • MT 7034: A1J A2J • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5310	1
Korean • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2K • MT 4524: A2K A1K • MT 7034: A1K A2K • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5311	1
LA Spanish • MT 4479: A1S A1Y • MT 4504: • MT 4513: • MT 4517: A5S A5D A5Y B2S A1S • MT 4524: B9S B9D B9Y A1S A1D A1Y E1S E1Y E2S E2Y E3S E3Y E7S E8S E8D E8Y • MT 7034: A1S A1D A1Y A2S A2D A2Y • MT 7052: A5S A5Y A6S A6Y A7S A8S B1S B1D B1Y B2S B3S B4S B5S B6S B7S B8S B9S C2S C3S C4S • MT 7053: • MT 7136: • MT 7178:	41A5312	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Norwegian • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5313	1
Polish • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5314	1
Portuguese • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5315	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Romanian • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5317	1
Romanian • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5316	1
Russian/Cyrillic • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5318	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Serbian/Cyrillic • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5319	1
Slovak • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5320	1
Spanish • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5321	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Swedish/Finnish • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5322	1
SF/G • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5323	1
Thailand • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2T A1T C3T C9T D1T • MT 4524: A2T A9T B1T B2TB3T B4T A1T • MT 7034: A1T A2T • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5324	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Turkish • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5325	1
Turkish • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5326	1
UK English • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5327	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
US European • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5328	1
Slovenian • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41A5329	1
Arabic (New) • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	45J4880	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Lithuanian • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	45J4896	1
Indian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A1Q A2Q • MT 7052: • MT 7053: • MT 7136: • MT 7178:	54Y8381	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--US English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5039	1
PS/2--Arabic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034:	41A5040	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7052: • MT 7053: • MT 7136: • MT 7178:		
PS/2--A/F • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5041	1
PS/2--B/F • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5042	1
PS/2--Belgium English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5043	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Brazilian Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5044	1
PS/2--Bulgarian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5045	1
PS/2--Chinese/US • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5046	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Czech (ABB) • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5047	1
PS/2--Danish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5048	1
PS/2--Dutch • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5049	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--French • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5050	1
PS/2--French Canadian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5051	1
PS/2--French Canadian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5052	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--German • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5053	1
PS/2--Greek • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5054	1
PS/2--Greek/US • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5080	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Hebrew • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5055	1
PS/2--Hungarian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5056	1
PS/2--Iceland • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5057	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Italian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5058	1
PS/2--Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5059	1
PS/2--Korean • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5060	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--LA Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5061	1
PS/2--Norwegian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5062	1
PS/2--Polish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5063	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5064	1
PS/2--Romanian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5065	1
PS/2--Russian/Cyrillic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5066	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Serbian/Cyrillic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5067	1
PS/2--Slovak • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5068	1
PS/2--Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5069	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Swedish/Finnish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5070	1
PS/2--SF/G • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5071	1
PS/2--Thailand • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5072	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Turkish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5073	1
PS/2--Turkish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5074	1
PS/2 --UK English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5075	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--US European • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5076	1
PS/2--Slovenian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5077	1
PS/2--Indian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	54Y8382	1

Keyboard - Fingerprint	FRU #	CRU
US English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4780	1
Arabic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4781	1
A/F • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4782	1

Keyboard - Fingerprint	FRU #	CRU
Belgium French • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4783	1
Belgium English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4784	1
Brazilian Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4785	1

Keyboard - Fingerprint	FRU #	CRU
Bulgarian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4786	1
Chinese/US • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4787	1
Czech (ABB) • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4788	1

Keyboard - Fingerprint	FRU #	CRU
Danish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4789	1
Dutch • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4790	1
French • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4791	1

Keyboard - Fingerprint	FRU #	CRU
French Canadian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4792	1
French Canadian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4793	1
German • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4794	1

Keyboard - Fingerprint	FRU #	CRU
Greek • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4795	1
Greek/US • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4796	1
Hebrew • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4797	1

Keyboard - Fingerprint	FRU #	CRU
Hungarian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4798	1
Iceland • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4799	1
Italian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4800	1

Keyboard - Fingerprint	FRU #	CRU
Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4801	1
Korean • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4802	1
LA Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4803	1

Keyboard - Fingerprint	FRU #	CRU
Norwegian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4804	1
Polish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4805	1
Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4806	1

Keyboard - Fingerprint	FRU #	CRU
Romanian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4807	1
Romanian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4808	1
Russian/Cyrillic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4809	1

Keyboard - Fingerprint	FRU #	CRU
Serbian/Cyrillic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4810	1
Slovak • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4811	1
Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4812	1

Keyboard - Fingerprint	FRU #	CRU
Swedish/Finnish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4813	1
Swiss French/German • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4814	1
Thailand • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4815	1

Keyboard - Fingerprint	FRU #	CRU
Turkish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4816	1
Turkish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4817	1
UK English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4818	1

Keyboard - Fingerprint	FRU #	CRU
US European • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4819	1
Slovenian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	57Y4820	1
US English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8001	1

Keyboard - Fingerprint	FRU #	CRU
Arabic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8002	1
A/F • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8003	1
Belgium French • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8004	1

Keyboard - Fingerprint	FRU #	CRU
Belgium English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8005	1
Brazilian Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8006	1
Bulgarian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8007	1

Keyboard - Fingerprint	FRU #	CRU
Chinese/US • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8008	1
Czech (ABB) • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8009	1
Danish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8010	1

Keyboard - Fingerprint	FRU #	CRU
Dutch • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8011	1
French • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8012	1
French Canadian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8013	1

Keyboard - Fingerprint	FRU #	CRU
French Canadian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8014	1
German • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8015	1
Greek • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8016	1

Keyboard - Fingerprint	FRU #	CRU
Greek/US • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8017	1
Hebrew • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8018	1
Hungarian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8019	1

Keyboard - Fingerprint	FRU #	CRU
Iceland • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8020	1
Italian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8021	1
Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8022	1

Keyboard - Fingerprint	FRU #	CRU
Korean • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8023	1
LA Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8024	1
Norwegian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8025	1

Keyboard - Fingerprint	FRU #	CRU
Polish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8026	1
Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8027	1
Romanian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8038	1

Keyboard - Fingerprint	FRU #	CRU
Romanian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8039	1
Russian/Cyrillic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8028	1
Serbian/Cyrillic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8040	1

Keyboard - Fingerprint	FRU #	CRU
Slovak • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8029	1
Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8030	1
Swedish/Finnish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8031	1

Keyboard - Fingerprint	FRU #	CRU
Swiss French/German • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8032	1
Thailand • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8033	1
Turkish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8041	1

Keyboard - Fingerprint	FRU #	CRU
Turkish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8034	1
UK English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8035	1
US European • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03X8036	1
Slovenian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053:	03X8037	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7136: • MT 7178:		

Mice	FRU #	CRU
Lenovo enhanced optical USB mouse • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	45J4889	1
Optical wheel mouse PS/2 • MT 4479: A1S A1Y • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A4H A5S A5D A5Y A5H A5V A2M A2A A2T A2B A2H A2V A2K A2R A3Q B2U B2F B2S B3P B4P A9G B1G A6V A7V A8V A1U A1F A1S A1P A1G A1M A1A A1Q A1T A1J B5H B6V B7J B8J B9M C1M C2M C3A C3T C4G C4V C5V C6M C7M C8G C9A C9T D1A D1T D2M • MT 4524: A6H A7H A8H B9S B9D B9Y B9V A2A A2T A2B A2H A2V A2K A2R A3Q A4G A5G C6M C7M C8M C9M A9A A9T B1A B1T B2A B2T B3A B3T B4A B4T D5P D6P B5J B6J B7J B8J D1G D2G D3G D4G C1V C2V C3V C4V C5V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A 1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D7H D8J D9J E1U E1F E1S E1P E1L E1D E1Y E2U E2F E2S E3U E3F E3S E4G E5M E6M E7U E7F E7S E8S E8D E8Y E9J F1J F2J F3J F4P F5P F6P F7P F8P F9M G1M G2P G3P G4P G5M • MT 7034: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2 • MT 7052: A5S A5Y A6S A6Y A3G A4G A7U A7F A7S A8U A8F A8S A9G B1S B1D B1Y B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F C1G C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	51J0061	1

Adapters and miscellaneous FRUs

Adapters and miscellaneous	FRU #	CRU
USB 2.0 media card reader, 25 in 1 ROHS • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	45R8139	2
ATI HD5450 (DP+DVI) HP 512M 64 bit • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	89Y6151	1
DVI_I (M) -VGA (F) adapter • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	54Y8255	2

Adapters and miscellaneous	FRU #	CRU
DP to DVI dongle 200mm • MT 4479: • MT 4504: • MT 4513: • MT 4517: B7J B8J • MT 4524: B5J B6J B7J B8J D8J D9J E9J F1J F2J F3J • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	43N9160	2
PCI-E IEEE 1394 firewire adapter (LP) • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	89Y1712	2
Soft modem V90/V44 - ATX • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T9026	1

Adapters and miscellaneous	FRU #	CRU
Modem phone cable • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	39K5120	1
Lenovo branded speakers • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41A5334	1
Speaker power brick • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	89P8571	1

Adapters and miscellaneous	FRU #	CRU
Thermal grease syringe • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	91P8835	N
PCI-E *1 USB 3.0 card, FH • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T7030	1
DMS59 to dual DVI dongle • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41X6398	2

Power Cords

Power Cords-primary	FRU #	CRU
Line Cord - US • MT 4479: A1S • MT 4504: • MT 4513: • MT 4517: A5S A5D A2A A2T B2U B2F B2S A1U A1F A1S A1A A1T C3A C3T C9A C9T D1A D1T • MT 4524: B9S B9D A2A A2T A9A A9T B1A B1T B2A B2T B3A B3T B4A B4T A1U A1F A1S A1L A1D A1A A1T E1U E1F E1S E1L E1D E2U E2F E2S E3U E3F E3S E7U E7F E7S E8S E8D • MT 7034: A1U A1F A1S A1L A1D A1A A1T A2U A2F A2S A2L A2D A2A A2T • MT 7052: A5S A6S A7U A7F A7S A8U A8F A8S B1S B1D B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: • MT 7178:	41R3184	1
Line Cord - Australia, New Zealand • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2M A1M B9M C1M C2M C6M C7M D2M • MT 4524: C6M C7M C8M C9M A1M E5M E6M F9M G1M G5M • MT 7034: A1M A2M • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3196	1
Line Cord - Brazil (Portuguese) • MT 4479: • MT 4504: • MT 4513: • MT 4517: B3P B4P A1P • MT 4524: D5P D6P A1P E1P F4P F5P F6P F7P F8P G2P G3P G4P • MT 7034: A1P A2P • MT 7052: • MT 7053: • MT 7136: • MT 7178:	45J9595	1

Power Cords-primary	FRU #	CRU
Line Cord - LA High Volt (APU) • MT 4479: A1Y • MT 4504: • MT 4513: • MT 4517: A5Y • MT 4524: B9Y A1Y E1Y E8Y • MT 7034: A1Y A2Y • MT 7052: A5Y A6Y B1Y • MT 7053: • MT 7136: • MT 7178:	41R3176	1
Line Cord - Korean • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2K A2R • MT 4524: A2K A2R A1K A1R • MT 7034: A1K A1R A1R A2K • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3260	1
Line Cord - Singapore, Malaysia, Brunei, Hong Kong • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A4H A5H A2A A2B A2H A9G B1G A1G A1A B5H C3A C4G C8G C9A D1A • MT 4524: A6H A7H A8H B9V A2B A2H A4G A5G D1G D2G D3G D4G A1B A1H A1G D7H E4G • MT 7034: A1G A1A A1H A1B A2G A2A A2H A2B • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3224	1

Power Cords-primary	FRU #	CRU
Line Cord - Taiwan • MT 4479: • MT 4504: • MT 4513: • MT 4517: A5V A2V A6V A7V A8V B6V C4V C5V • MT 4524: A2V C1V C2V C3V C4V C5V A1V • MT 7034: A1V A2V • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3278	1
Line Cord - South Africa • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A2M A2A A9G B1G A1M A1A A1G B9M C1M C2M C3A C4G C6M C7M C8G C9A D1A D2M • MT 4524: A4G A5G C6M C7M C8M C9M D1G D2G D3G D4G A1M A1G E4G E5M E6M F9M G1M G5M • MT 7034: A1G A1M A1A A2G A2M A2A • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3220	1
Line Cord - Indian • MT 4479: • MT 4504: • MT 4513: • MT 4517: A3Q A1Q • MT 4524: A3Q A1Q • MT 7034: A1Q A2Q • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3341	1

Power Cords-primary	FRU #	CRU
Line Cord - Chinese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A1C • MT 7034: A1C A2C • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3256	1
Line Cord - Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: A1J B7J B8J • MT 4524: B5J B6J B7J B8J A1J D8J D9J E9J F1J F2J F3J • MT 7034: A1J A1E A2J A2E • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3248	1
Line Cord - Italian • MT 4479: A1S A1Y • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A5S A5Y A9G B1G A1S A1G C4G C8G • MT 4524: B9S B9Y A4G A5G D1G D2G D3G D4G A1S A1Y A1G E1Y E4G E8S E8Y • MT 7034: A1S A1Y A1L A1G A2S A2Y A2L A2G • MT 7052: A5S A5Y A6S A6Y A7S A8S A3G A4G A9G B1S B1Y B2S B3S B4S B5S B6S B7S B8S B9S C1G C2S C3S C4S • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3232	1

Power Cords-primary	FRU #	CRU
Line Cord - Indonesia, Laos, Cambodia, and Vietnam • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3208	1
Line Cord - Denmark • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3212	1
Line Cord - Switzerland • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3228	1

Power Cords-primary	FRU #	CRU
Line Cord - Israel • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3236	1
Line Cord - A models • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2A A1A C3A C9A D1A • MT 4524: A2A A9A A1A • MT 7034: A1A A2A • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3208	1
Line Cord - Thailand • MT 4479: • MT 4504: • MT 4513: • MT 4517: C9T D1T • MT 4524: A9T A1T • MT 7034: A1T A2T • MT 7052: • MT 7053: • MT 7136: • MT 7178:	43N9029	1
Line Cord - UK, Ireland • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A1G A1A A2G A2A • MT 7052: • MT 7053:	41R3224	1

Power Cords-primary	FRU #	CRU
• MT 7136: • MT 7178:		

Power Cords-secondary	FRU #	CRU
Line Cord - US • MT 4479: A1S • MT 4504: • MT 4513: • MT 4517: A5S A5D A2A A2T B2U B2F B2S A1U A1F A1S A1A A1T C3A C3T C9A C9T D1A D1T • MT 4524: B9S B9D A2A A2T A9A A9T B1A B1T B2A B2T B3A B3T B4A B4T A1U A1F A1S A1L A1D A1A A1T E1U E1F E1S E1L E1D E2U E2F E2S E3U E3F E3S E7U E7F E7S E8S E8D • MT 7034: A1U A1F A1S A1L A1D A1A A1T A2U A2F A2S A2L A2D A2A A2T • MT 7052: A5S A6S A7U A7F A7S A8U A8F A8S B1S B1D B2U B2F B2S B3U B3F B3S B4U B4F B4S B5S B5F B5U B6U B6S B6F B7U B7S B7F B8U B8S B8F B9U B9S B9F C2U C2S C2F C3U C3F C3S C4U C4F C4S • MT 7053: • MT 7136: • MT 7178:	41R3185	1
Line Cord - Chinese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A1M A2M • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3257	1
Line Cord - Brazil (Portuguese) • MT 4479: • MT 4504: • MT 4513: • MT 4517: B3P B4P A1P • MT 4524: D5P D6P A1P E1P F4P F5P F6P F7P F8P G2P G3P G4P • MT 7034: A1P A2P • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3271	1

Power Cords-secondary	FRU #	CRU
Line Cord - LA High Volt (APU) • MT 4479: A1Y • MT 4504: • MT 4513: • MT 4517: A5Y • MT 4524: B9Y A1Y E1Y E8Y • MT 7034: A1Y A2Y • MT 7052: A5Y A6Y B1Y • MT 7053: • MT 7136: • MT 7178:	41R3177	1
Line Cord - Korean • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2K A2R • MT 4524: A2K A2R A1K A1R • MT 7034: A1K A1R A1R A2K • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3261	1
Line Cord - Taiwan • MT 4479: • MT 4504: • MT 4513: • MT 4517: A5V A2V A6V A7V A8V B6V C4V C5V • MT 4524: A2V C1V C2V C3V C4V C5V A1V • MT 7034: A1G A1A A1H A1B A2G A2A A2H A2B • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3279	1

Power Cords-secondary	FRU #	CRU
Line Cord - South Africa • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A2M A2A A9G B1G A1M A1A A1G B9M C1M C2M C3A C4G C6M C7M C8G C9A D1A D2M • MT 4524: A4G A5G C6M C7M C8M C9M D1G D2G D3G D4G A1M A1G E4G E5M E6M F9M G1M G5M • MT 7034: A1V A2V • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3221	1
Line Cord - Indian • MT 4479: • MT 4504: • MT 4513: • MT 4517: A3Q A1Q • MT 4524: A3Q A1Q • MT 7034: A1G A1M A1A A2G A2M A2A • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3175	1
Line Cord - Japanese and Japanese English • MT 4479: • MT 4504: • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A1J B7J B8J • MT 4524: B5J B6J B7J B8J A1J D8J D9J E9J F1J F2J F3J • MT 7034: A1Q A2Q • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3249	1

Power Cords-secondary	FRU #	CRU
Line Cord - Australia, New Zealand • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2M A1M B9M C1M C2M C6M C7M D2M • MT 4524: C6M C7M C8M C9M A1M E5M E6M F9M G1M G5M • MT 7034: A1C A2C • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3197	1
Line Cord - Singapore, Malaysia, Brunei, Hong Kong • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: • MT 4517: A4H A5H A2A A2B A2H A9G B1G A1G A1A B5H C3A C4G C8G C9A D1A • MT 4524: A6H A7H A8H B9V A2B A2H A4G A5G D1G D2G D3G D4G D7H E4G • MT 7034: A1J A1E A2J A2E • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3225	1
Line Cord - UK Ireland • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A1S A1Y A1L A1G A2S A2Y A2L A2G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3225	1

Power Cords-secondary	FRU #	CRU
Line Cord - Italian • MT 4479: A1S A1Y • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A5S A5Y A9G B1G A1S A1G C4G C8G • MT 4524: B9S B9Y A4G A5G D1G D2G D3G D4G A1S A1Y A1G E1Y E4G E8S E8Y • MT 7034: • MT 7052: A5S A5Y A6S A6Y A7S A8S A3G A4G A9G B1S B1Y B2S B3S B4S B5S B6S B7S B8S B9S C1G C2S C3S C4S • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3233	1
Line Cord - Indonesia, Laos, Cambodia, and Vietnam A models • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A1G A2G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3209	1
Line Cord - Denmark • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3213	1

Power Cords-secondary	FRU #	CRU
Line Cord - Switzerland • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1G A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3229	1
Line Cord - Israel • MT 4479: • MT 4504: A1G A2G A3G • MT 4513: A1G A2G A3G A4G A5G A6G A7G A8G • MT 4517: A9G B1G A1G C4G C8G • MT 4524: A4G A5G D1G D2G D3G D4G A1G E4G • MT 7034: A1A A2A • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: A2G • MT 7178: A1G A2G A3G	41R3237	1
Line Cord - Austria, Belgium, Croatia, Czechoslovakia, Finland, France, Germany, Hungary, Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2A A1A C3A C9A D1A • MT 4524: A2A A9A A1A • MT 7034: A1T A2T • MT 7052: • MT 7053: • MT 7136: • MT 7178:	41R3209	1
Line Cord - Thailand • MT 4479: • MT 4504: • MT 4513: • MT 4517: C9T D1T • MT 4524: A9T A1T • MT 7034: A1G A1A A2G A2A • MT 7052:	43N9030	1

Power Cords-secondary	FRU #	CRU
• MT 7053: • MT 7136: • MT 7178:		

Recovery discs

Windows 7 Professional 32 Recovery CD

Windows 7 Professional 32	FRU #	CRU
Arabic • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0856	1
Brazilian Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: B3P A1P • MT 4524: D5P A1P • MT 7034: A1P • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0857	1
Simplified Chinese • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2B • MT 4524: • MT 7034: A1C • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0858	1

Windows 7 Professional 32	FRU #	CRU
Chinese-Traditional • MT 4479: • MT 4504: • MT 4513: • MT 4517: A5V A2V A6V C4V C5V • MT 4524: A2B A1B B9V A2V C1V C4V C5V A1V • MT 7034: A1V • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0859	1
Czech • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0860	1
India English • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0861	1

Windows 7 Professional 32	FRU #	CRU
French • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1F A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1F A1G • MT 7052: B6F B7F • MT 7053: • MT 7136: • MT 7178:	03T0862	1
Greek • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0863	1
German • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0864	1

Windows 7 Professional 32	FRU #	CRU
Hebrew • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0865	1
Hong Kong • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2B A5V A2V A6V C4V C5V • MT 4524: A2B A1B • MT 7034: A1B • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0866	1
Hungarian • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0867	1

Windows 7 Professional 32	FRU #	CRU
Italian • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0868	1
Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: A1J B7J B8J • MT 4524: B7J B8J A1J D8J D9J F2J F3J • MT 7034: A1J • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0869	1
Korean • MT 4479: • MT 4504: • MT 4513: • MT 4517: A2K A2R • MT 4524: A2K A1K • MT 7034: A1K • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0870	1

Windows 7 Professional 32	FRU #	CRU
Polish • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0871	1
Portuguese • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0872	1
Romanian • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0873	1

Windows 7 Professional 32	FRU #	CRU
Russian • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0874	1
Slovakian • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0875	1
Spanish • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: B6S B7S • MT 7053: • MT 7136: • MT 7178:	03T0876	1

Windows 7 Professional 32	FRU #	CRU
Serbian-Latin • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0877	1
Turkish • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0878	1
US English • MT 4479: • MT 4504: • MT 4513: • MT 4517: A4H A5H A2M A2A A2H A2R A3Q A1U A1G A1M A1A A1Q B5H B9M C3A C3T C4G C6M C9A C9T D1A D1T • MT 4524: • MT 7034: A1U A1F A1L A1G A1M A1A A1Q A1H A1R A1E • MT 7052: B6U B7U • MT 7053: • MT 7136: • MT 7178:	03T0879	1

Windows 7 Professional 32	FRU #	CRU
C and L Nordics (DK/FI/SV/NO/EN) • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0880	1
C and L EMEA (NL/FR/GR/IT/EN) • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0881	1
C and L Croatian (EN/SL/CR) • MT 4479: • MT 4504: A3G • MT 4513: • MT 4517: A1G C4G C8G • MT 4524: A5G A1G • MT 7034: A1G • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0882	1

Windows 7 Home Basic 32 Recovery CD

Windows 7 Home Basic 32	FRU #	CRU
Arabic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0883	1
Brazilian Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0884	1
Chinese-simplified • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0885	1

Windows 7 Home Basic 32	FRU #	CRU
India English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0886	1
Russian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0887	1
Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0888	1

Windows 7 Home Basic 32	FRU #	CRU
Serbian-Latin • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0889	1
Turkish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0890	1
English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0891	1

Windows 7 Home Premium 32 Recovery CD

Windows 7 Home Premium 32	FRU #	CRU
India English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0892	1
English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0893	1

Windows 7 Home Premium 64 Recovery CD

Windows 7 Home Premium 64	FRU #	CRU
Brazilian Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0919	1
Chinese-Simplified • MT 4479: • MT 4504: • MT 4513: • MT 4517:	03T0920	1

Windows 7 Home Premium 64	FRU #	CRU
• MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:		
Chinese-Traditional • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0921	1
Czech • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0922	1
Indian English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0923	1

Windows 7 Home Premium 64	FRU #	CRU
French • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0924	1
Hong Kong • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0925	1
Italian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0926	1

Windows 7 Home Premium 64	FRU #	CRU
Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0927	1
Korean • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0928	1
Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0929	1

Windows 7 Home Premium 64	FRU #	CRU
US English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0930	1
C and L Nordics (DK/FI/SV/NO/EN) • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0931	1
C and L EMEA (NL/FR/GR/IT/EN) • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0932	1

Windows 7 Professional 64 Recovery CD

Windows 7 Professional 64	FRU #	CRU
Arabic • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0894	1
Brazilian Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: D6P E1P F4P F5P F6P F7P F8P G2P G3P G4P • MT 7034: A2P • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0895	1
Chinese-Simplified • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A2C • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0896	1

Windows 7 Professional 64	FRU #	CRU
Chinese-Traditional • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A2V • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0897	1
Czech • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0898	1
India English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2Q • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0899	1

Windows 7 Professional 64	FRU #	CRU
French • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E1F E2F E3F E4G E7F • MT 7034: A2G A2F • MT 7052: A3G A4G A7F A8F A9G B2F B3F B4F B5F B8F B9F C1G C2F C3F C4F • MT 7053: • MT 7136: • MT 7178:	03T0900	1
Greek • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0901	1
German • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0902	1

Windows 7 Professional 64	FRU #	CRU
Hebrew • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0903	1
Hong Kong • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: A2B • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0904	1
Hungary • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0905	1

Windows 7 Professional 64	FRU #	CRU
Italian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0906	1
Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: B5J B6J E9J F1J • MT 7034: A2J • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0907	1
Polish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0908	1

Windows 7 Professional 64	FRU #	CRU
Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0909	1
Romanian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0910	1
Slovakian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0911	1

Windows 7 Professional 64	FRU #	CRU
Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G B5S B8S B9S C1G • MT 7053: • MT 7136: • MT 7178:	03T0912	1
Serbian-Latin • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0913	1
Turkish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0914	1

Windows 7 Professional 64	FRU #	CRU
US English • MT 4479: • MT 4504: • MT 4513: • MT 4517: C1M C2M C7M D2M • MT 4524: A6H A7H A8H A4G D1G D2G D3G D4G C6M C7M C8M D7H E1U E1L E2U E3U E4G E5M E6M E7U F9M G1M G5M • MT 7034: A2U A2F A2L A2G A2M A2A A2Q A2H A2R A2E • MT 7052: A3G A4G A7U A8U A9G B2U B3U B4U B5U B8U B9U C1G C2U C3U C4U • MT 7053: • MT 7136: • MT 7178:	03T0915	1
C and L Nordics (DK/FI/SV/NO/EN) • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0916	1
C and L EMEA (NL/FR/GR/IT/EN) • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G • MT 7053: • MT 7136: • MT 7178:	03T0917	1
C and L Croatian (EN/SL/CR) • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: A4G D1G D2G D3G D4G E4G • MT 7034: A2G • MT 7052: A3G A4G A9G C1G	03T0918	1

Windows 7 Professional 64	FRU #	CRU
• MT 7053: • MT 7136: • MT 7178:		

Windows XP Professional 32 Recovery CD

Note: The Windows XP Professional recovery DVDs are available only for models with a valid Microsoft Windows XP Professional certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows XP Professional preinstalled from the factory, but has either a Windows 7 or Windows Vista COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

Windows XP Professional 32	FRU #	CRU
Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0501	1
English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0502	1

Windows XP Professional 32	FRU #	CRU
Brazil Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0723	1
Traditional Chinese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0724	1
Czech • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0725	1

Windows XP Professional 32	FRU #	CRU
Denmark • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0726	1
Finnish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0727	1
French • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0737	1

Windows XP Professional 32	FRU #	CRU
German • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0728	1
Hong Kong • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0729	1
Italian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0730	1

Windows XP Professional 32	FRU #	CRU
Norwegian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0731	1
Polish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0732	1
Russian • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0733	1

Windows XP Professional 32	FRU #	CRU
Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0734	1
Swedish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0735	1
Turkish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T0736	1

Windows XP Professionally Generic 32 Recovery CD

Note: The Windows XP Professional recovery DVDs are available only for models with a valid Microsoft Windows XP Professional certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows XP Professional preinstalled from the factory, but has either a Windows 7 or Windows Vista COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

Windows XP Professionally Generic 32	FRU #	CRU
Simplified Chinese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03W7477	1
Greek • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03W7483	1
Hungary • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03W7486	1

Windows XP Professionally Generic 32	FRU #	CRU
Korean • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03W7489	1
Dutch • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03W7490	1
Portuguese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03W7493	1

Windows Vista Business 32 Recovery CD

Note: The Windows Vista recovery DVDs are available only for models with a valid Microsoft Windows Vista certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows Vista Business or Windows Vista Ultimate preinstalled from the factory, but has a Windows 7 COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

Windows Vista Business 32	FRU #	CRU
India English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T1311	1
US English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T1312	1

Windows Vista Home Basic 32 Recovery CD

Note: The Windows Vista recovery DVDs are available only for models with a valid Microsoft Windows Vista certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows Vista Business or Windows Vista Ultimate preinstalled from the factory, but has a Windows 7 COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

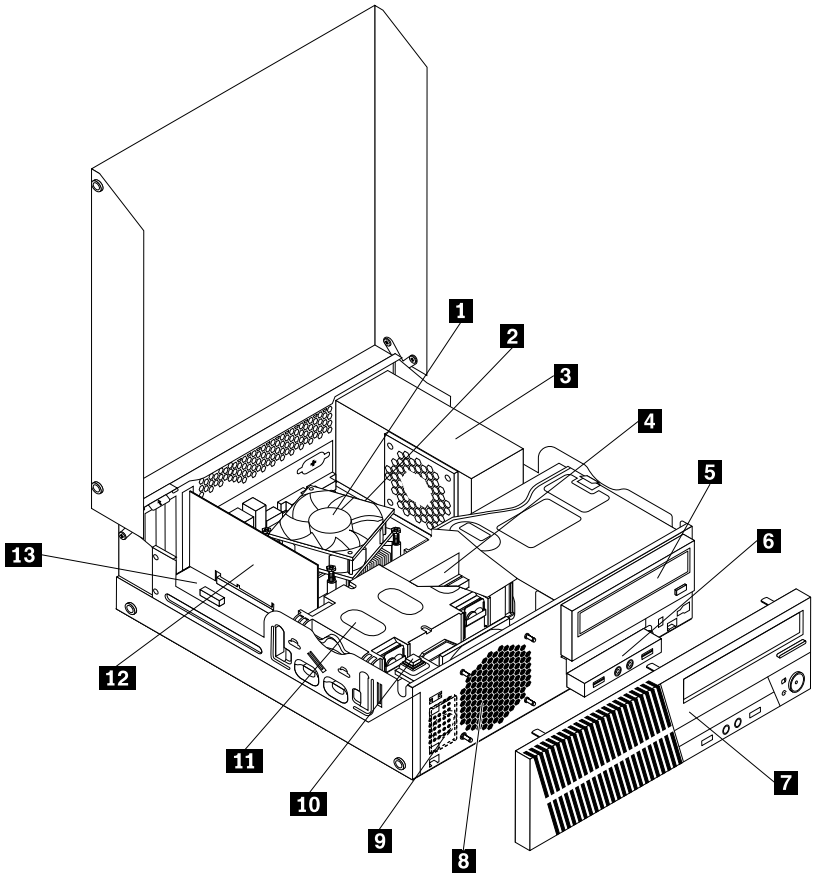
Windows Vista Home Basic 32	FRU #	CRU
India English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136:	03T1313	1

Windows Vista Home Basic 32	FRU #	CRU
• MT 7178:		
French • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T1314	1
Japanese • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T1315	1
Spanish • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T1316	1

Windows Vista Home Basic 32	FRU #	CRU
US English • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T1317	1
C and L1 Nordics: DK/FI/SV/NO/EN • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T1318	1
C and L2 EMEA: NL/FR/GR/IT/EN • MT 4479: • MT 4504: • MT 4513: • MT 4517: • MT 4524: • MT 7034: • MT 7052: • MT 7053: • MT 7136: • MT 7178:	03T1319	1

Overall: MT 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177

The following replaceable components are available for the 4466, 4471, 4474, 4477, 4480, 4485, 4496, 4498, 4503, 4512, 4514, 4518, 4554, 7005, 7023, 7033, 7035, 7072, 7079, and 7177 machine type models.



Item #	FRUs	FRU #	CRU
1	Heat sink, Tamdhu IV Intel LGA1156 95W/73W cooler kit • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9513	N
2	Microprocessor, Ci3 2100 SANDY BRIDGE stepping Q0 3MB 2c FCLGA 3.1GHZ 65W • MT 4466: • MT 4477: A1J A2J A3S A3Y • MT 4480:	03T8011	N

Item #	FRUs	FRU #	CRU
	• MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: • MT 4514: A2H A3H A3V A8S A8D A8Y B3M B4M A4A A4T A5A A5T B7P B8P A6J A7J B5G B6G A9V B1V B2V A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J B9V C9J D1J • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: A1G • MT 7177:		
2	Microprocessor, Ci3 2120 SANDY BRIDGE stepping Q0 3MB 2c FCLGA 3.3GHz 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: C1M C2M C3M C1A C1T D3G D6J D7J • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8010	N
2	Microprocessor, Ci7 2600 SANDY BRIDGE stepping D2 8MB 4c FCLGA 3.4GHZ 95W vPro • MT 4466: • MT 4477: • MT 4480: A5U A5F A5S A6G A8S A8Y B3U B3F B3S B4U B4F B4S B7U B7S B7F • MT 4485: • MT 4498: A3H • MT 4503: • MT 4512: A3G A4G A7G • MT 4514: • MT 4518: B5S B5D B5Y B5M A2G B9M A7A A7T A8J A9J B1J C6G C7G B6V D7U D7F D7S E5U E5F E5S E7J E8J A2P F4P F6M G1P G2P • MT 7005:	03T8012	N

Item #	FRUs	FRU #	CRU
	• MT 7033: • MT 7072: • MT 7079: • MT 7177: A2G		
2	Microprocessor, Ci5 2500 SANDY BRIDGE stepping D2 6MB 4c FCLGA 3.3GHz 95W vPro • MT 4466: • MT 4477: • MT 4480: A3M A7G B5U B5F B5S B6S B6U B6F C1U C1F C1S • MT 4485: • MT 4498: • MT 4503: • MT 4512: A6G • MT 4514: • MT 4518: A3G A3M C1M C2M A6A A6T D3H D6U D6F D6S D9G E1M E3M E6S E6D E6Y F7M G4M • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: • MT 7072: A1G • MT 7079: • MT 7177:	03T8013	N
2	Microprocessor, Ci5 2400 SANDY BRIDGE stepping D2 6MB 4c FCLGA 3.1GHZ 95W vPro • MT 4466: A1G • MT 4477: • MT 4480: A1J A2J A4U A4F A4S B1U B1F B1S B2G A9S A9Y B8U B8S B8F B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: A1H A2H • MT 4503: • MT 4512: A1G A2G A5G • MT 4514: • MT 4518: B4S B4D B4Y A4G A4M C8U C8F B8M C3M A5A A5T C9P D1P B2J B3J C4G C5G B7V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D2H D4V D5V D8G E2M E4U E4F E4S E9J F1J F2P F3P F5M F8P F9P G3M G5M G7J G8J • MT 7005: • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7072: • MT 7079:	03T8014	N

Item #	FRUs	FRU #	CRU
	• MT 7177: A1G		
2	Microprocessor, Ci5 2300 SANDY BRIDGE stepping D2 6MB 4c FCLGA 2.8GHZ 95W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8035	N
2	Microprocessor, Ci7 2600S SANDY BRIDGE stepping D2 8MB 4c FCLGA 2.8GHZ 65W vPro • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: G9J H1J • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8015	N
2	Microprocessor, Ci5 2500S SANDY BRIDGE stepping D2 6MB 4c FCLGA 2.7GHZ 65W vPro • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514:	03T8016	N

Item #	FRUs	FRU #	CRU
	• MT 4518: G4M G6M • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:		
2	Microprocessor, Ci5 2400S SANDY BRIDGE stepping D2 6MB 4c FCLGA 2.5GHZ 65W vPro • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: G3M • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8017	N
2	Microprocessor, G620 SANDY BRIDGE stepping Q-0 3MB 2c FCLGA 2.6GHz 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: C7M • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T6226	N

Item #	FRUs	FRU #	CRU
2	Microprocessor, G840 SANDY BRIDGE stepping Q-0 3MB 2c FCLGA 2.8GHz 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: C4A C4T C5V C6V C8M • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T6225	N
2	Microprocessor, G850 SANDY BRIDGE stepping Q-0 3MB 2c FCLGA 2.9GHz 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: D5M • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T6224	N
2	Microprocessor, Core i3-2125 SANDY BRIDGE, 3MB J-1 2C/4T 3.30 GHz, 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518:	03T8357	N

Item #	FRUs	FRU #	CRU
	• MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:		
2	Microprocessor, Core i3-2130 SANDY BRIDGE, 3MB Q-0 2C/4T 3.40 GHz, 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8358	N
2	Microprocessor, Core i5-2320 SANDY BRIDGE, 6MB D-2 4C/4T 3.00 GHz, 95W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8359	N

Item #	FRUs	FRU #	CRU
2	Microprocessor, G630 SANDY BRIDGE, 3MB, Q-0 2C/2T 2.7GHz, 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: D2M D4A D4T • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8360	N
2	Microprocessor, G860 SANDY BRIDGE, 3MB, Q-0 2C/2T 3.0GHz, 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8361	N
2	Microprocessor, G540 SANDY BRIDGE 2MB Q-0 2c FCLGA 2.5GHz 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518:	03T8354	N

Item #	FRUs	FRU #	CRU
	• MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:		
2	Microprocessor, G530 SANDY BRIDGE 2MB Q-0 2c FCLGA 2.5GHz 65W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8356	N
2	Microprocessor, G440 SANDY BRIDGE 1MB Q-0 1c FCLGA 1.6GHz 35W • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8355	N

Item #	FRUs	FRU #	CRU
3	Power supply, TFX240W cctive PFC power supply for 11L---all countries • MT 4466: A1G • MT 4477: A1J A2J A3S A3Y • MT 4480: A1J A2J A3M A4U A4F A4S A5U A5F A5S A6G A7G B1U B1F B1S B2G A8S A8Y A9S A9Y B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A2H A3H A3V A8S A8D A8Y B3M B4M A4A A4T A5A A5T B7P B8P A6J A7J B5G B6G A9V B1V B2V A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J B9V C1M C2M C3M C4A C4T C5V C6V C7M C8M C9J D1J C1A C1T D2M D3G D4A D4T D5M D6J D7J • MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A3G A3M A4G A4M C8U C8F C8S B8M B9M C1M C2M C3M A5A A5T A6A A6T A7A A7T C9P D1P A8J A9J B1J B2J B3J C4G C5G C6G C7G B6V B7V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D2H D3H D4V D5V D6U D6F D6S D7U D7F D7S D8 • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	54Y8846	2
3	Power supply, TFX240W85+power supply for 11L---all countries • MT 4466: A1G • MT 4477: A1J A2J A3S A3Y • MT 4480: A1J A2J A3M A4U A4F A4S A5U A5F A5S A6G A7G B1U B1F B1S B2G A8S A8Y A9S A9Y B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A2H A3H A3V A8S A8D A8Y B3M B4M A4A A4T A5A A5T B7P B8P A6J A7J B5G B6G A9V B1V B2V A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J B9V C1M C2M C3M C4A C4T C5V C6V C7M C8M C9J D1J C1A C1T D2M D3G D4A D4T D5M D6J D7J	54Y8824	2

Item #	FRUs	FRU #	CRU
	• MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A3G A3M A4G A4M C8U C8F C8S B8M B9M C1M C2M C3M A5A A5T A6A A6T A7A A7T C9P D1P A8J A9J B1J B2J B3J C4G C5G C6G C7G B6V B7V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D2H D3H D4V D5V D6U D6F D6S D7U D7F D7S D8G D9G • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
4	Memory module, 1GB PC3-10600 1333MHz DDR3 UDIMM • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	64Y6648	1
4	Memory module, 2GB PC3-10600 1333MHz DDR3 UDIMM • MT 4466: A1G • MT 4477: A1J A2J A3S A3Y • MT 4480: A1J A2J A4U A4F A4S A6G A7G A8S A8Y A9S A9Y • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G • MT 4514: A2H A3H A3V A8S A8D A8Y B3M B4M A4A A4T A5A A5T B7P B8P A6J A7J B5G B6G A9V B1V B2V A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J B9V C1M C4A C4T C5V C6V C7M C9J D1J C1A C1T D3G D4A D4T D6J D7J • MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A3G A3M A4G A4M C8U C8F C8S B8M B9M C1M C2M C3M A5A A5T A6A A6T A7A A7T C9P D1P A8J B2J B3J C4G	64Y6649	1

Item #	FRUs	FRU #	CRU
	C5G C6G C7G B6V B7V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D2H D3H D4V D5V D6U D6F D6S D8G E6S E6D E6Y E9J F1J A2P F2P F9P G1P G7J G8J • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
4	Memory module, 4GB PC3-10600 1333MHz DDR3 UDIMM • MT 4466: • MT 4477: • MT 4480: A3M A5U A5F A5S B1U B1F B1S B2G B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: • MT 4512: A7G • MT 4514: C2M C3M C8M D2M D5M • MT 4518: A9J B1J D7U D7F D7S D9G E1M E2M E3M E4U E4F E4S E5U E5F E5S E7J E8J F3P F4P F5M F6M F7M F8P G2P G3M G4M G5M G6M G9J H1J • MT 7005: • MT 7033: A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7072: • MT 7079: • MT 7177:	89Y9224	1
5	Optical drive, DVD-ROM drive - 16x/48x - SATA • MT 4466: • MT 4477: A2J • MT 4480: A2J • MT 4485: • MT 4498: A1H • MT 4503: • MT 4512: • MT 4514: A2H B4M A7J A9V B1V C6V C7M D1J D2M D6J • MT 4518: B1J B3J B7V D4V D5V E8J F1J G7J G9J • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	71Y5543	1

Item #	FRUs	FRU #	CRU
5	Optical drive, DVD recorder rambo 8 - SATA 12XRAM write • MT 4466: A1G • MT 4477: A1J A3S A3Y • MT 4480: A1J A3M A4U A4F A4S A5U A5F A5S A6G A7G B1U B1F B1S B2G A8S A8Y A9S A9Y B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: A2H A3H • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A3H A3V A8S A8D A8Y B3M A4A A4T A5A A5T B7P B8P A6J B5G B6G B2V A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J B9V C1M C2M C3M C4A C4T C5V C8M C9J C1A C1T D3G D4A D4T D5M D7J • MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A3G A3M A4G A4M C8U C8F C8S B8M B9M C1M C2M C3M A5A A5T A6A A6T A7A A7T C9P D1P A8J A9J B2J C4G C5G C6G C7G B6V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D2H D3H D6U D6F D6S D7U D7F D7S D8G D9G E1M E2M E3M E4U E4F E4S E5U E5F E5S E6S E6D E6Y E7J E9J A2P F2P F3P F4P F5M F6M F • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	71Y5545	1
5	Optical drive, SATA - slim optical disk driver rambo • MT 4466: • MT 4477: • MT 4480: A1J A3M A4U A4F A4S A5U A5F A5S A6G A7G B1U B1F B1S B2G A8S A8Y A9S A9Y B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A3H A3V A8S A8D A8Y B3M A4A A4T A5A A5T B7P B8P A6J B5G B6G B2V A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J B9V C1M C2M C3M C4A C4T C5V C8M C9J • MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A3G A3M A4G A4M C8U C8F C8S B8M B9M C1M C2M C3M A5A A5T A6A A6T A7A A7T C9P D1P A8J A9J B2J C4G C5G C6G C7G B6V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	45K0433	1

Item #	FRUs	FRU #	CRU
	D2H D3H D6U D6F D6S D7U D7F D7S D8G D9G E1M E2M E3M E4U E4F E4S E5U E5F E5S E6S E6D E6Y E7J E9J A2P F2P F3P F4P F5M F6M F7M F8P F9P G1P G2P G3M G4M G5M G6M G8J H1J • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:		
5	Optical drive, SATA - slim optical disk driver DVD ROM • MT 4466: • MT 4477: • MT 4480: A2J • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A2H B4M A7J A9V B1V C6V C7M D1J • MT 4518: B1J B3J B7V D4V D5V E8J F1J G7J G9J • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	71Y5848	1
7	Front bezel • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9587	1

Item #	FRUs	FRU #	CRU
8	System fan (with fan rubber) • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	45K6530	1
8	FRU, front fan-for 11L (included in mechanical kit) • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	45K6530	1
9	Internal speaker • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models	54Y8252	1

Item #	FRUs	FRU #	CRU
	• MT 7072: all models • MT 7079: all models • MT 7177: all models		
10	C2 intrusion switch (476mm) • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	39K5022	2
11	Hard disk drive, SATA 250GB 7200RPM/3Gb/8M • MT 4466: • MT 4477: A1J A2J • MT 4480: A7G B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: • MT 4503: • MT 4512: A6G • MT 4514: B3M B4M A6J A7J A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J C1M C4A C4T C7M C9J D1J C1A C1T D2M D4A D4T D6J D7J • MT 4518: A4G A4M B8M C1M C2M C3M A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D8G G5M G6M G7J G8J G9J H1J • MT 7005: • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J • MT 7072: • MT 7079: • MT 7177:	40Y9036	1

Item #	FRUs	FRU #	CRU
11	Hard disk drive, SATA 250GB 7200RPM/3Gb/8M • MT 4466: • MT 4477: A1J A2J • MT 4480: A7G B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: • MT 4503: • MT 4512: A6G • MT 4514: B3M B4M A6J A7J A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J C1M C4A C4T C7M C9J D1J C1A C1T D2M D4A D4T D6J D7J • MT 4518: A4G A4M B8M C1M C2M C3M A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D8G G5M G6M G7J G8J G9J H1J • MT 7005: • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J • MT 7072: • MT 7079: • MT 7177:	45K0408	1
11	Hard disk drive, SATA 320GB 7200 RPM/3Gb/8M • MT 4466: A1G • MT 4477: • MT 4480: A1J A2J A3M A4U A4F A4S A5U A5F A5S A6G • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: • MT 4514: A5A A5T B7P B8P A9V B1V C2M C6V C8M D5M • MT 4518: A3G A3M C8U C8F C8S B9M A5A A5T A6A A6T C9P D1P A8J A9J B1J B2J B3J B7V D6U D6F D6S D7U D7F D7S E1M E2M E3M E7J E8J E9J F1J F2P F5M F7M F8P • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7072: A1G • MT 7079: • MT 7177:	87H4891	1

Item #	FRUs	FRU #	CRU
11	Hard disk drive, SATA 320GB 7200 RPM/3Gb/8M • MT 4466: A1G • MT 4477: • MT 4480: A1J A2J A3M A4U A4F A4S A5U A5F A5S A6G • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: • MT 4514: A5A A5T B7P B8P A9V B1V C2M C6V C8M D5M • MT 4518: A3G A3M C8U C8F C8S B9M A5A A5T A6A A6T C9P D1P A8J A9J B1J B2J B3J B7V D6U D6F D6S D7U D7F D7S E1M E2M E3M E7J E8J E9J F1J F2P F5M F7M F8P • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7072: A1G • MT 7079: • MT 7177:	45K0409	1
11	Hard disk drive, SATA 500GB 7200RPM/3Gb/16M • MT 4466: • MT 4477: A3S A3Y • MT 4480: B1U B1F B1S B2G A8S A8Y A9S A9Y B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G • MT 4512: A1G A2G A3G A4G A5G A7G • MT 4514: A2H A3H A3V A8S A8D A8Y A4A A4T B5G B6G B2V B9V C3M C5V D3G • MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A7A A7T C4G C5G C6G C7G B6V D2H D3H D4V D5V D9G E4U E4F E4S E5U E5F E5SE6S E6D E6Y A2P F3P F4P F6M F9P G1P G2P G3M G4M • MT 7005: • MT 7033: • MT 7072: • MT 7079: A1G • MT 7177: A1G A2G	41X5582	1

Item #	FRUs	FRU #	CRU
11	Hard disk drive, SATA 500GB 7200RPM/3Gb/16M • MT 4466: • MT 4477: A3S A3Y • MT 4480: B1U B1F B1S B2G A8S A8Y A9S A9Y B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G • MT 4512: A1G A2G A3G A4G A5G A7G • MT 4514: A2H A3H A3V A8S A8D A8Y A4A A4T B5G B6G B2V B9V C3M C5V D3G • MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A7A A7T C4G C5G C6G C7G B6V D2H D3H D4V D5V D9G E4U E4F E4S E5U E5F E5SE6S E6D E6Y A2P F3P F4P F6M F9P G1P G2P G3M G4M • MT 7005: • MT 7033: • MT 7072: • MT 7079: A1G • MT 7177: A1G A2G	45K0410	1
11	Hard disk drive, SATA 1TB 7200RPM/3Gb/32M • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	45K0412	1

Item #	FRUs	FRU #	CRU
11	Hard disk drive, SATAIII 250GB 7200RPM/6Gb/16M • MT 4466: • MT 4477: A1J A2J • MT 4480: B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: B3M B4M A6J A7J A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J C1M C4A C4T C7M C9J D1J C1A C1T D2M D4A D4T D6J D7J • MT 4518: A4G A4M B8M C1M C2M C3M A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D8G G5M G6M G7J G8J G9J H1J • MT 7005: • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J • MT 7072: • MT 7079: • MT 7177:	03T7039	1
11	Hard disk drive, SATAIII 320GB 7200RPM/6Gb/16M • MT 4466: A1G • MT 4477: • MT 4480: A1J A2J A3M A4U A4F A4S A5U A5F A5S • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: • MT 4514: A5A A5T B7P B8P A9V B1V C2M C6V C8M D5M • MT 4518: A3G A3M C8U C8F C8S B9M A5A A5T A6A A6T C9P D1P A8J A9J B1J B2J B3J B7V D6U D6F D6S D7U D7F D7S E1M E2M E3M E7J E8J E9J F1J F2P F5M F7M F8P • MT 7005: • MT 7033: A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7072: • MT 7079: • MT 7177:	03T7040	1

Item #	FRUs	FRU #	CRU
11	Hard disk drive, SATAIII 500GB 7200RPM/6Gb/16M • MT 4466: • MT 4477: • MT 4480: B5U B5F B5SB6U B6S B6F B7U B7S B7F B8U B8F B8S • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G • MT 4512: A1G A2G A3G A4G A5G • MT 4514: A2H A3H A3V A8S A8D A8Y A4A A4T B5G B6G B2V B9V C3M C5V D3G • MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A7A A7T C4G C5G C6G C7G B6V D2H D3H D4V D5V D9G E4U E4F E4S E5U E5F E5SE6S E6D E6Y A2P F3P F4P F6M F9P G1P G2P G3M G4M • MT 7005: • MT 7033: • MT 7072: • MT 7079: A1G • MT 7177: A1G A2G	03T7041	1
11	Hard disk drive, SATAIII 1TB 7200RPM/6Gb/32M • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: • MT 7072: A1G • MT 7079: • MT 7177:	03T7042	1

Item #	FRUs	FRU #	CRU
11	Hard disk drive, 2.5 inch SSD 160G SSD • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	45K0616	1
11	Hard disk drive, 2.5 inch 300G 10K RPM hard disk drive • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	91Y1657	1
12	ATI HD5450 (DP+DVI) LP 512M 64 bit • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	89Y6152	1

Item #	FRUs	FRU #	CRU
	• MT 7072: • MT 7079: • MT 7177:		
12	NVIDIA Quadro FX380 (DVI + DP) LP • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	64Y8206	2
12	HD6450 DVI+ DP LP • MT 4466: • MT 4477: • MT 4480: B4U B4F B4S • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8149	2

Item #	FRUs	FRU #	CRU
12	NVIDIA Quarpro NVS300 512MB 64bit DMS59 LP • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T8352	2
12	Geforce 310 512M 64 bit DVI+DP LP • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T9009	2
13	System board, Intel Q67 planar GA level- without LAN surge and TCM header planar _ special bid-Russia only • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B1U B1F B1S B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A4G C4G C5G C6G C7G • MT 7005: • MT 7033: A1G	03T6004	N

Item #	FRUs	FRU #	CRU
	• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
13	System board, Intel Q67 planar - ATX (Foxconn)(SPI) • MT 4466: A1G • MT 4477: A1J A2J A3S A3Y • MT 4480: A1J A2J A3M A4U A4F A4S A5U A5F A5S A6G A7G B1U B1F B1S B2G A8S A8Y A9S A9Y B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A2H A3H A3V A8S A8D A8Y B3M B4M A4A A4T A5A A5T B7P B8P A6J A7J B5G B6G A9V B1V B2V A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J B9V C1M C2M C3M C4A C4T C5V C6V C7M C8M C9J D1J C1A C1T D2M D3G D4A D4T D5M D6J D7J • MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A3G A3M A4G A4M C8U C8F C8S B8M B9M C1M C2M C3M A5A A5T A6A A6T A7A A7T C9P D1P A8J A9J B1J B2J B3J C4G C5G C6G C7G B6V B7V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D2H D3H D4V D5V D6U D6F D6S D7U D7 • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J A2U A2F A2S A2P A2L A2D A2Y A2G A2M A2A A2Q A2T A2C A2B A2H A2V A2R A2E A2J A2K • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	03T6560	N

Mechanical FRUs

The FRUs listed in the following tables are not illustrated.

FRUs	FRU #	CRU
FRU, LX-323 Intel 95W thermal kit • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models	03T9512	2

FRUs	FRU #	CRU
• MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models		
FRU, temperature sense cable 400mm_6 pin (with holder) • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	54Y9922	2
FRU, front I/O cable_NC_R(10L_ESD_A495_U390) • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	54Y9910	2

FRUs	FRU #	CRU
FRU, SATA cable 400mm, angel, 1 latching • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	54Y9941	2
FRU, LED/switch cable (11L_420mm) • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	54Y9916	2
FRU, cabel -SATA for 1st optical disk driver or 2nd hard disk driver 420mm with 2 latch • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models	54Y9948	2

FRUs	FRU #	CRU
• MT 7072: all models • MT 7079: all models • MT 7177: all models		
FRU, second serial port cable 250mm (with level shift IC) • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	71Y6217	2
FRU, e-SATA cable_R_300mm_LP • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	41R3311	2

FRUs	FRU #	CRU
FRU, PS2 cable (170mm) • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	43N9149	2
FRU, rear USB cable_R_200mm_LP • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	42Y8006	2
FRU, power cable for slim optical disk driver and hard disk driver • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models	45J9596	2

FRUs	FRU #	CRU
• MT 7072: all models • MT 7079: all models • MT 7177: all models		
FRU, daughter card for slim optical disk driver and 2 hard disk driver bracket • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	71Y6841	2
FRU, cabel -SATA for 1st optical disk driver or 2nd hard disk driver 420mm with 2 latch • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	54Y9948	2

FRUs	FRU #	CRU
FRU, LX-323 fan duct • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9509	1
FRU, parallel cable, LP, 280mm_R • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	45J9598	1
FRU, 2.5 hard disk driver to 3.5 hard disk driver conversion kit, EC for 5.25 bay no bezel • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models	43N9593	1

FRUs	FRU #	CRU
• MT 7072: all models • MT 7079: all models • MT 7177: all models		
FRU, mechanical kit • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9585	1
FRU, mechanical chassis without front bezel • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9586	1

FRUs	FRU #	CRU
FRU, hard disk driver tray assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9588	1
FRU, optical disk driver cage assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9589	1
FRU, I/O plate assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models	43N9846	1

FRUs	FRU #	CRU
• MT 7072: all models • MT 7079: all models • MT 7177: all models		
FRU, top cover assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9591	1
FRU, bottom assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9592	1

FRUs	FRU #	CRU
FRU, cable lock • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9593	1
FRU, vertical rubber foot assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9594	1
FRU, C2 bracket • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models	03T9595	1

FRUs	FRU #	CRU
• MT 7072: all models • MT 7079: all models • MT 7177: all models		
FRU, optical disk driver bezel assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9596	1
FRU, optical disk driver clip • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9597	1

FRUs	FRU #	CRU
FRU, optical disk driver blank bezel kit • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9598	1
FRU, card reader bracket assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9599	1
FRU, card reader bezel • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models	03T9600	1

FRUs	FRU #	CRU
• MT 7072: all models • MT 7079: all models • MT 7177: all models		
FRU, non-card reader bezel • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9601	1
FRU, slim odd bracket with bezel assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9602	1

FRUs	FRU #	CRU
FRU, second hard disk driver bracket with bezel assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9603	1
FRU, universal 2nd hard disk driver bezel • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9608	1
FRU, air deflector assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models	03T9604	1

FRUs	FRU #	CRU
• MT 7072: all models • MT 7079: all models • MT 7177: all models		
FRU, vertical stand assembly with rubber • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	45K6566	1
FRU, open button • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9606	1

FRUs	FRU #	CRU
FRU, cable clip assembly • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9607	1
FRU, SATA cable_R_455mm, no latch, RoHS • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	43N9131	1
FRU, hard disk driver bracket (without slim optical disk driver) fan • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models	45K6342	1

FRUs	FRU #	CRU
• MT 7072: all models • MT 7079: all models • MT 7177: all models		
FRU, hard disk driver bracket (with slim optical disk driver) fan • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	45K6115	1
FRU, PCIe bracket fan for NVS300 • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models • MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models	03T9704	1
FRU, rubber foot for horizontal • MT 4466: all models • MT 4477: all models • MT 4480: all models • MT 4485: all models • MT 4498: all models • MT 4503: all models • MT 4512: all models • MT 4514: all models	43N9728	1

FRUs	FRU #	CRU
• MT 4518: all models • MT 7005: all models • MT 7033: all models • MT 7072: all models • MT 7079: all models • MT 7177: all models		

Keyboard and Mouse

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
US English • MT 4466: • MT 4477: • MT 4480: A3M A4U A5U A6G A7G B1U B3U B4U B5U B6U B7U B8U B9U C1U • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A2H A3H B3M B4M A4A A5A A1U A1G A1M A1A A1Q C1M C2M C3M C4A C7M C8M C1A D2M D4A D5M • MT 4518: B5M A2G A3G A3M A4G A4M C8U B8M B9M C1M C2M C3M A5A A6A A7A C4G C5G C6G C7G A1U A1G A1M A1A A1Q A1H A1R A1E D2H D3H D6U D7U D8G D9G E1M E2M E3M E4U E5U F5M F6M F7M G3M G4M G5M G6M • MT 7005: A1U A1L • MT 7033: A1U A1F A1L A1M A1A A1Q A1H A1R A1E A2U A2F A2L A2M A2A A2Q A2H A2R A2E • MT 7072: • MT 7079: A1G • MT 7177: A1G A2G	41A5289	1
Arabic • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G	41A5290	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
• MT 7079: A1G • MT 7177: A1G A2G		
A/F • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5291	1
B/F • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5292	1
Belgium English • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G	41A5293	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
• MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Brazilian Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: B7P B8P A1P • MT 4518: C9P D1P A1P A2P F2P F3P F4P F8P F9P G1P G2P • MT 7005: A1P • MT 7033: A1P A2P • MT 7072: • MT 7079: • MT 7177:	41A5294	1
Bulgarian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5295	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Chinese/US • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A3V A9V B1V B2V A1B B9V C5V C6V • MT 4518: B6V B7V A1V D4V D5V • MT 7005: • MT 7033: A1C A2C • MT 7072: • MT 7079: • MT 7177:	41A5296	1
Czech (ABB) • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5297	1
Danish • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G	41A5298	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Dutch • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5299	1
French • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5300	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
French Canadian • MT 4466: • MT 4477: • MT 4480: A4F A5F B1F B3F B4F B5F B6F B7F B8F B9F C1F • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A1F • MT 4518: C8F A1F D6F D7F E4F E5F • MT 7005: A1F • MT 7033: A1F A2F • MT 7072: • MT 7079: • MT 7177:	41A5301	1
French Canadian • MT 4466: • MT 4477: • MT 4480: A4F A5F B1F B3F B4F B5F B6F B7F B8F B9F C1F • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A1F • MT 4518: C8F A1F D6F D7F E4F E5F • MT 7005: A1F • MT 7033: A1F A2F • MT 7072: • MT 7079: • MT 7177:	41A5302	1
German • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G	41A5303	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Greek • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5304	1
Greek/US • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5305	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Hebrew • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5306	1
Hungarian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5307	1
Iceland • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G	41A5308	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Italian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5309	1
Japanese • MT 4466: • MT 4477: A1J A2J • MT 4480: A1J A2J • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A6J A7J A1J C9J D1J D6J D7J • MT 4518: A8J A9J B1J B2J B3J A1J E7J E8J E9J F1J G7J G8J G9J H1J • MT 7005: • MT 7033: A1J A2J • MT 7072: • MT 7079: • MT 7177:	41A5310	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Korean • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A1K • MT 7005: • MT 7033: A1K A2K • MT 7072: • MT 7079: • MT 7177:	41A5311	1
LA Spanish • MT 4466: • MT 4477: A3S A3Y • MT 4480: A4S A5S B1S A8S A8Y A9S A9Y B3S B4S B5S B6S B7S B8S B9S C1S • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A8S A8D A8Y A1S • MT 4518: B4S B4D B4Y B5S B5D B5Y C8S A1S A1D A1Y D6S D7S E4S E5S E6S E6D E6Y • MT 7005:A1S A1D A1Y • MT 7033: A1S A1D A1Y A2S A2D A2Y • MT 7072: • MT 7079: • MT 7177:	41A5312	1
Norwegian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005:	41A5313	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
• MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Polish • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5314	1
Portuguese • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5315	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Romanian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5317	1
Romanian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5316	1
Russian/Cyrillic • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G	41A5318	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Serbian/Cyrillic • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5319	1
Slovak • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5320	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Spanish • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5321	1
Swedish/Finnish • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5322	1
SF/G • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G	41A5323	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Thailand • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A4T A5T C4T C1T D4T • MT 4518: A5T A6T A7T A1T • MT 7005: • MT 7033: A1T A2T • MT 7072: • MT 7079: • MT 7177:	41A5324	1
Turkish • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5325	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Turkish • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5326	1
UK English • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5327	1
US European • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G	41A5328	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Slovenian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41A5329	1
Arabic (New) • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	45J4880	1

Keyboard - Preferred Pro USB Keyboard	FRU #	CRU
Lithuanian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	45J4896	1
Indian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A1Q A2Q • MT 7072: • MT 7079: • MT 7177:	54Y8381	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--US English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518:	41A5039	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:		
PS/2--Arabic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5040	1
PS/2--A/F • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5041	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--B/F • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5042	1
PS/2--Belgium English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5043	1
PS/2--Brazilian Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	41A5044	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
PS/2--Bulgarian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5045	1
PS/2--Chinese/US • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5046	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Czech (ABB) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5047	1
PS/2--Danish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5048	1
PS/2--Dutch • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	41A5049	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
PS/2--French • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5050	1
PS/2--French Canadian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5051	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--French Canadian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5052	1
PS/2--German • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5053	1
PS/2--Greek • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	41A5054	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
PS/2--Greek/US • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5080	1
PS/2--Hebrew • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5055	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Hungarian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5056	1
PS/2--Iceland • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5057	1
PS/2--Italian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	41A5058	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
PS/2--Japanese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5059	1
PS/2--Korean • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5060	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--LA Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5061	1
PS/2--Norwegian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5062	1
PS/2--Polish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	41A5063	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
PS/2--Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5064	1
PS/2--Romanian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5065	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--Russian/Cyrillic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5066	1
PS/2--Serbian/Cyrillic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5067	1
PS/2--Slovak • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	41A5068	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
PS/2--Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5069	1
PS/2--Swedish/Finnish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5070	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--SF/G • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5071	1
PS/2--Thailand • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5072	1
PS/2--Turkish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	41A5073	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
PS/2--Turkish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5074	1
PS/2 --UK English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5075	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
PS/2--US European • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5076	1
PS/2--Slovenian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5077	1
PS/2--Indian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	54Y8382	1

Keyboard - Preferred Pro Full Size PS/2	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		

Keyboard - Fingerprint	FRU #	CRU
US English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4780	1
Arabic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4781	1

Keyboard - Fingerprint	FRU #	CRU
A/F • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4782	1
Belgium French • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4783	1
Belgium English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	57Y4784	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Brazilian Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4785	1
Bulgarian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4786	1

Keyboard - Fingerprint	FRU #	CRU
Chinese/US • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4787	1
Czech (ABB) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4788	1
Danish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	57Y4789	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Dutch • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4790	1
French • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4791	1

Keyboard - Fingerprint	FRU #	CRU
French Canadian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4792	1
French Canadian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4793	1
German • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	57Y4794	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Greek • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4795	1
Greek/US • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4796	1

Keyboard - Fingerprint	FRU #	CRU
Hebrew • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4797	1
Hungarian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4798	1
Iceland • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	57Y4799	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Italian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4800	1
Japanese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4801	1

Keyboard - Fingerprint	FRU #	CRU
Korean • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4802	1
LA Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4803	1
Norwegian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	57Y4804	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Polish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4805	1
Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4806	1

Keyboard - Fingerprint	FRU #	CRU
Romanian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4807	1
Romanian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4808	1
Russian/Cyrillic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	57Y4809	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Serbian/Cyrillic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4810	1
Slovak • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4811	1

Keyboard - Fingerprint	FRU #	CRU
Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4812	1
Swedish/Finnish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4813	1
Swiss French/German • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	57Y4814	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Thailand • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4815	1
Turkish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4816	1

Keyboard - Fingerprint	FRU #	CRU
Turkish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4817	1
UK English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4818	1
US European • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	57Y4819	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Slovenian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	57Y4820	1
US English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8001	1

Keyboard - Fingerprint	FRU #	CRU
Arabic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8002	1
A/F • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8003	1
Belgium French • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03X8004	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Belgium English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8005	1
Brazilian Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8006	1

Keyboard - Fingerprint	FRU #	CRU
Bulgarian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8007	1
Chinese/US • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8008	1
Czech (ABB) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03X8009	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Danish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8010	1
Dutch • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8011	1

Keyboard - Fingerprint	FRU #	CRU
French • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8012	1
French Canadian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8013	1
French Canadian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03X8014	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
German • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8015	1
Greek • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8016	1

Keyboard - Fingerprint	FRU #	CRU
Greek/US • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8017	1
Hebrew • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8018	1
Hungarian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03X8019	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Iceland • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8020	1
Italian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8021	1

Keyboard - Fingerprint	FRU #	CRU
Japanese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8022	1
Korean • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8023	1
LA Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03X8024	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Norwegian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8025	1
Polish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8026	1

Keyboard - Fingerprint	FRU #	CRU
Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8027	1
Romanian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8038	1
Romanian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03X8039	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Russian/Cyrillic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8028	1
Serbian/Cyrillic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8040	1

Keyboard - Fingerprint	FRU #	CRU
Slovak • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8029	1
Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8030	1
Swedish/Finnish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03X8031	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Swiss French/German • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8032	1
Thailand • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8033	1

Keyboard - Fingerprint	FRU #	CRU
Turkish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8041	1
Turkish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8034	1
UK English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03X8035	1

Keyboard - Fingerprint	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
US European • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8036	1
Slovenian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03X8037	1

Mice	FRU #	CRU
Lenovo enhanced optical USB mouse • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A2H A3H A3V A8S A8D A8Y B3M B4M A4A A4T A5A A5T B7P B8P A6J A7J B5G B6G A9V B1V B2V A1U A1F A1S A1P A1G A1M A1A A1Q A1B A1J B9V C1M C2M C3M C4A C4T C5V C6V C7M C8M C9J D1J C1A C1T D2M D3G D4A D4T D5M D6J D7J • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	45J4889	1
Optical wheel mouse PS/2 • MT 4466: A1G • MT 4477: A1J A2J A3S A3Y • MT 4480: A1J A2J A3M A4U A4F A4S A5U A5F A5S A6G A7G B1U B1F B1S B2G A8S A8Y A9S A9Y B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: • MT 4518: B4S B4D B4Y B5S B5D B5Y B5M A2G A3G A3M A4G A4M C8U C8F C8S B8M B9M C1M C2M C3M A5A A5T A6A A6T A7A A7T C9P D1P A8J A9J B1J B2J B3J C4G C5G C6G C7G B6V B7V A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J D2H D3H D4V D5V D6U D6F D6S D7U D7F D7S D8G D9G E1M E2M E3M E4U E4F E4S E5U E5F E5S E6S E6D E6Y E7J E8J E9J F1J A2P F2P F3P F4P F5M F6M F7M F8P F9P G1P G2P G3M G4M G5M G6M G7J G8J G9J H1J • MT 7005: A1U A1F A1S A1P A1L A1D A1Y • MT 7033: A1U A1F A1S A1P A1L A1D A1Y A1 • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	51J0061	1

Adapters and miscellaneous FRUs

Adapters and miscellaneous	FRU #	CRU
USB 2.0 media card reader, 25 in 1, ROHS, slim • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	46R1529	2
DVI_I(M)-VGA(F) adpater • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	54Y8255	2
DP to DVI dongle 200mm • MT 4466: • MT 4477: • MT 4480: A1J A2J A3M • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A6J A7J C9J D1J • MT 4518: A8J A9J B1J B2J B3J E1M E2M E3M E7J E8J E9J F1J F6M	43N9160	2

Adapters and miscellaneous	FRU #	CRU
• MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:		
PCI-E IEEE 1394 firewire adapter (LP) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	89Y1712	2
Soft modem V.90/V.44 - LP • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T9027	1

Adapters and miscellaneous	FRU #	CRU
Modem phone cable • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	39K5120	1
Lenovo branded speakers • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	41A5334	1
PCI-E *1 USB 3.0 card, LP • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03T7031	1

Adapters and miscellaneous	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Speaker power brick • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	89P8571	1
Thermal grease syringe • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	91P8835	N
DMS59 to dual DVI dongle • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514:	41X6398	2

Adapters and miscellaneous	FRU #	CRU
• MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:		

Power Cords

Power Cords-primary	FRU #	CRU
Line Cord - US • MT 4466: • MT 4477: A3S • MT 4480: A4U A4F A4S A5U A5F A5S B1U B1F B1S A8S A9S B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A8S A8D A4A A4T A5A A5T A1U A1F A1S A1A C4A C4T C1A C1T D4A D4T • MT 4518: B4S B4D B5S B5D C8U C8F C8S A5A A5T A6A A6T A7A A7T A1U A1F A1S A1L A1DA1A A1T D6U D6F D6S D7U D7F D7S E4U E4F E4S E5U E5F E5S E6S E6D • MT 7005: A1U A1F A1S A1L A1D • MT 7033: A1U A1F A1S A1L A1D A1A A1T A2U A2F A2S A2L A2D A2A A2T • MT 7072: • MT 7079: • MT 7177:	41R3184	1
Line Cord - Australia, New Zealand • MT 4466: • MT 4477: • MT 4480: A3M • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: B3M B4M A1M C1M C2M C3M C7M C8M D2M D5M • MT 4518: B5M A3M A4M B8M B9M C1M C2M C3M A1M E1M E2M E3M F5M F6M F7M G3M G4M G5M G6M • MT 7005: • MT 7033: A1M A2M • MT 7072:	41R3196	1

Power Cords-primary	FRU #	CRU
• MT 7079: • MT 7177:		
Line Cord - Brazil (Portuguese) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: B7P B8P A1P • MT 4518: C9P D1P A1P A2P F2P F3P F4P F8P F9P G1P G2P • MT 7005: A1P • MT 7033: A1P A2P • MT 7072: • MT 7079: • MT 7177:	45J9595	1
Line Cord - LA High Volt (APU) • MT 4466: • MT 4477: A3Y • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A8Y • MT 4518: B4Y B5Y A1Y A1L E6Y • MT 7005: A1Y • MT 7033: A1Y A2Y • MT 7072: • MT 7079: • MT 7177:	41R3176	1
Line Cord - Korea • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A1K A1R	41R3260	1

Power Cords-primary	FRU #	CRU
• MT 7005: • MT 7033: A1K A1R A1R A2K • MT 7072: • MT 7079: • MT 7177:		
Line Cord - Singapore, Malaysia, Brunei, Hong Kong • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A2H A3H A4A A5A B5G B6G A1G A1A A1B C4A D3G C1A D4A • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G A1A D2H D3H D8G D9G • MT 7005: • MT 7033: A1G A1A A1H A1B A2G A2A A2H A2B • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41R3224	1
Line Cord - Taiwan • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A3V A9V B1V B2V B9V C5V C6V • MT 4518: B6V B7V A1V D4V D5V • MT 7005: • MT 7033: A1V A2V • MT 7072: • MT 7079: • MT 7177:	41R3278	1

Power Cords-primary	FRU #	CRU
Line Cord - South Africa • MT 4466: A1G • MT 4477: • MT 4480: A3M A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B3M B4M A4A A5A B5G B6G A1G A1M A1A C1M C2M C3M C4A C7M C8M D3G C1A D2M D4A D5M • MT 4518: B5M A2G A3G A3M A4G A4M B8M B9M C1M C2M C3M C4G C5G C6G C7G A1G A1M D8G D9G E1M E2M E3M F5M F6M F7M G3M G4M G5M G6M • MT 7005: • MT 7033: A1G A1M A1A A2G A2M A2A • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41R3220	1
Line Cord - India • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A1Q • MT 4518: A1Q • MT 7005: • MT 7033: A1Q A2Q • MT 7072: • MT 7079: • MT 7177:	41R3341	1
Line Cord - China • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A1C	41R3256	1

Power Cords-primary	FRU #	CRU
• MT 7005: • MT 7033: A1C A2C • MT 7072: • MT 7079: • MT 7177:		
Line Cord - Japan • MT 4466: • MT 4477: A1J A2J • MT 4480: A1J A2J • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A6J A7J A1J C9J D1J D6J D7J • MT 4518: A8J A9J B1J B2J B3J A1J E7J E8J E9J F1J G7J G8J G9J H1J • MT 7005: • MT 7033: A1J A1E A2J A2E • MT 7072: • MT 7079: • MT 7177:	41R3248	1
Line Cord - Italy • MT 4466: A1G • MT 4477: A3S A3Y • MT 4480: A6G A7G B2G A8S A9S B3S B4S B5S B6S B7S B8S B9S C1S • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A8S A8Y B5G B6G A1S A1G D3G • MT 4518: B4S B4Y B5S B5Y A2G A3G A4G C4G C5G C6G C7G A1S A1Y A1L A1G E6S E6Y • MT 7005: A1Y • MT 7033: A1S A1Y A1L A1G A2S A2Y A2L A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41R3232	1

Power Cords-primary	FRU #	CRU
Line Cord - Indonesia, Laos, Cambodia, and Vietnam • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: A1G • MT 7079: • MT 7177:	41R3208	1
Line Cord - Denmark • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G A1G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41R3212	1
Line Cord - Switzerland • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G A1G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G	41R3228	1

Power Cords-primary	FRU #	CRU
• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Line Cord - Israel • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G A1G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41R3236	1
Line Cord - A models • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A4A A5A A1A C4A C1A D4A • MT 4518: A1A • MT 7005: • MT 7033: A1A A2A • MT 7072: • MT 7079: • MT 7177:	41R3208	1

Power Cords-primary	FRU #	CRU
Line Cord - Thailand • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: C1T D4T • MT 4518: • MT 7005: • MT 7033: A1T A2T • MT 7072: • MT 7079: • MT 7177:	43N9029	1
Line Cord - UK, Ireland • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4518: A1G A1A • MT 7005: • MT 7033: A1G A1A A2G A2A • MT 7072: • MT 7079: • MT 7177:	41R3224	1

Power Cords--secondary	FRU #	CRU
Line Cord - US • MT 4466: • MT 4477: A3S • MT 4480: A4U A4F A4S A5U A5F A5S B1U B1F B1S A8S A9S B3U B3F B3S B4U B4F B4S B5U B5F B5S B6U B6S B6F B7U B7S B7F B8U B8F B8S B9U B9F B9S C1U C1F C1S • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A8S A8D A4A A4T A5A A5T A1U A1F A1S A1A C4A C4T C1A C1T D4A D4T	41R3185	1

Power Cords--secondary	FRU #	CRU
• MT 4518: B4S B4D B5S B5D C8U C8F C8S A5A A5T A6A A6T A7A A7T A1U A1F A1S A1L A1DA1A A1T D6U D6F D6S D7U D7F D7S E4U E4F E4S E5U E5F E5S E6S E6D • MT 7005: A1U A1F A1S A1L A1D • MT 7033: A1U A1F A1S A1L A1D A1A A1T A2U A2F A2S A2L A2D A2A A2T • MT 7072: • MT 7079: • MT 7177:		
Line Cord - China • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: B3M B4M A1M C1M C2M C3M C7M C8M D2M D5M • MT 4518: A1C • MT 7005: • MT 7033: A1M A2M • MT 7072: • MT 7079: • MT 7177:	41R3257	1
Line Cord - Brazil (Portuguese) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: B7P B8P A1P • MT 4518: C9P D1P A1P A2P F2P F3P F4P F8P F9P G1P G2P • MT 7005: A1P • MT 7033: A1P A2P • MT 7072: • MT 7079: • MT 7177:	41R3271	1

Power Cords--secondary	FRU #	CRU
Line Cord - LA High Volt (APU) • MT 4466: • MT 4477: A3Y • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A8Y • MT 4518: B4Y B5Y A1Y A1L E6Y • MT 7005: A1Y • MT 7033: A1Y A2Y • MT 7072: • MT 7079: • MT 7177:	41R3177	1
Line Cord - Korea • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A1K A1R • MT 7005: • MT 7033: A1K A1R A1R A2K • MT 7072: • MT 7079: • MT 7177:	41R3261	1
Line Cord - Taiwan • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A2H A3H A4A A5A B5G B6G A1G A1A A1B C4A D3G C1A D4A • MT 4518: B6V B7V A1V D4V D5V • MT 7005: • MT 7033: A1G A1A A1H A1B A2G A2A A2H A2B	41R3279	1

Power Cords--secondary	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Line Cord - South Africa • MT 4466: A1G • MT 4477: • MT 4480: A3M • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A3V A9V B1V B2V B9V C5V C6V • MT 4518: B5M A2G A3G A3M A4G A4M B8M B9M C1M C2M C3M C4G C5G C6G C7G A1G A1M D8G D9G E1M E2M E3M F5M F6M F7MG3M G4M G5M G6M • MT 7005: • MT 7033: A1V A2V • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41R3221	1
Line Cord - India • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: B3M B4M A4A A5A B5G B6G A1G A1M A1A C1M C2M C3M C4A C7M C8M D3G C1A D2M D4A D5M • MT 4518: A1Q • MT 7005: • MT 7033: A1G A1M A1A A2G A2M A2A • MT 7072: • MT 7079: • MT 7177:	41R3175	1

Power Cords--secondary	FRU #	CRU
Line Cord - Japanese and Japanese English • MT 4466: • MT 4477: A1J A2J • MT 4480: A1J A2J • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A1Q • MT 4518: A8J A9J B1J B2J B3J A1J E7J E8J E9J F1J G7J G8J G9J H1J • MT 7005: • MT 7033: A1Q A2Q • MT 7072: • MT 7079: • MT 7177:	41R3249	1
Line Cord - Australia, New Zealand • MT 4466: • MT 4477: • MT 4480: A3M A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: B5M A3M A4M B8M B9M C1M C2M C3M A1M E1M E2M E3M F5M F6M F7M G3M G4M G5M G6M • MT 7005: • MT 7033: A1C A2C • MT 7072: • MT 7079: • MT 7177:	41R3197	1
Line Cord - Singapore, Malaysia, Brunei, Hong Kong • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: A1H A2H A3H • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A6J A7J A1J C9J D1J D6J D7J • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G A1A D2H D3H D8G D9G • MT 7005: • MT 7033: A1J A1E A2J A2E	41R3225	1

Power Cords--secondary	FRU #	CRU
• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Line Cord -UK Ireland • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A1G A1A • MT 7005: • MT 7033: A1S A1Y A1L A1G A2S A2Y A2L A2G • MT 7072: • MT 7079: • MT 7177:	41R3225	1
Line Cord - Italy • MT 4466: A1G • MT 4477: A3S A3Y • MT 4480: A6G A7G B2G A8S A9S B3S B4S B5S B6S B7S B8S B9S C1S • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: A8S A8Y B5G B6G A1S A1G D3G • MT 4518: B4S B4Y B5S B5Y A2G A3G A4G C4G C5G C6G C7G A1S A1Y A1L A1G D8G D9G E6S E6Y • MT 7005: A1Y • MT 7033: • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41R3233	1

Power Cords--secondary	FRU #	CRU
Line Cord - Indonesia, Laos, Cambodia, and Vietnam A models • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: • MT 7177:	41R3209	1
Line Cord - Denmark • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G A1G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41R3213	1
Line Cord - Switzerland • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G A1G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1G A2G	41R3229	1

Power Cords--secondary	FRU #	CRU
• MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G		
Line Cord - Israel • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: AIG A2G A3G • MT 4512: A1G A2G A3G A4G A5G A6G A7G • MT 4514: B5G B6G A1G D3G • MT 4518: A2G A3G A4G C4G C5G C6G C7G A1G D8G D9G • MT 7005: • MT 7033: A1A A2A • MT 7072: A1G • MT 7079: A1G • MT 7177: A1G A2G	41R3237	1
Line Cord - Austria, Belgium, Croatia, Czechoslovakia, Finland, France, Germany, Hungary, Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A4A A5A A1A C4A C1A D4A • MT 4518: A1A • MT 7005: • MT 7033: A1T A2T • MT 7072: • MT 7079: • MT 7177:	41R3209	1
Line Cord - Thailand • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512:	43N9030	1

Power Cords--secondary	FRU #	CRU
• MT 4514: C1T D4T • MT 4518: • MT 7005: • MT 7033: A1G A1A A2G A2A • MT 7072: • MT 7079: • MT 7177:		

Recovery discs

Windows 7 Professional 32 Recovery CD

Windows 7 Professional 32	FRU #	CRU
Arabic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0856	1
Brazilian Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: B7P B8P • MT 4518: C9P D1P A1P • MT 7005: • MT 7033: A1P • MT 7072: • MT 7079:	03T0857	1

Windows 7 Professional 32	FRU #	CRU
• MT 7177:		
Simplified Chinese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A1C • MT 7072: • MT 7079: • MT 7177:	03T0858	1
Chinese-Traditional • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A1B B6V B7V A1V D4V • MT 7005: • MT 7033: A1V • MT 7072: • MT 7079: • MT 7177:	03T0859	1
Czech • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005:	03T0860	1

Windows 7 Professional 32	FRU #	CRU
• MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:		
India English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0861	1
French • MT 4466: • MT 4477: • MT 4480: B6F B7F • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1F A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1F A1G • MT 7072: • MT 7079: • MT 7177:	03T0862	1

Windows 7 Professional 32	FRU #	CRU
Greek • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0863	1
German • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0864	1
Hebrew • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G	03T0865	1

Windows 7 Professional 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Hong Kong • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A1B A3V A9V C5V C6V • MT 4518: • MT 7005: • MT 7033: A1B • MT 7072: • MT 7079: • MT 7177:	03T0866	1
Hungarian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0867	1

Windows 7 Professional 32	FRU #	CRU
Italian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0868	1
Japanese • MT 4466: • MT 4477: A1J A2J • MT 4480: A1J A2J • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: A6J A7J A1J C9J D1J D7J D8J • MT 4518: A8J B2J B3J A1J E9J F1J G7J G8J • MT 7005: • MT 7033: A1J • MT 7072: • MT 7079: • MT 7177:	03T0869	1
Korean • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A1K • MT 7005: • MT 7033: A1K	03T0870	1

Windows 7 Professional 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Polish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0871	1
Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0872	1

Windows 7 Professional 32	FRU #	CRU
Romanian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0873	1
Russian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0874	1
Slovakian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G	03T0875	1

Windows 7 Professional 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Spanish • MT 4466: • MT 4477: • MT 4480: B6S B7S • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0876	1
Sebian-Latin • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0877	1

Windows 7 Professional 32	FRU #	CRU
Turkish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0878	1
US English • MT 4466: • MT 4477: • MT 4480: B6U B7U • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: C1M C4A C4T C7M C1A C1T D4A D4T • MT 4518: B5M A3M A4M C2M A5A A6A A7A A1U A1L A1M A1A A1Q A1H A1R A1E D2H • MT 7005: • MT 7033: A1U A1F A1L A1G A1M A1A A1QA1H A1R A1E • MT 7072: • MT 7079: • MT 7177:	03T0879	1
C and L Nordics (DK/FI/SV/NO/EN) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G	03T0880	1

Windows 7 Professional 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
C and L EMEA (NL/FR/GR/IT/EN) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0881	1
C and L Croatian (EN/SL/CR) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: A3G • MT 4512: A5G • MT 4514: A1G D3G • MT 4518: A1G • MT 7005: • MT 7033: A1G • MT 7072: • MT 7079: • MT 7177:	03T0882	1

Windows 7 Home Basic 32 Recovery CD

Windows 7 Home Basic 32	FRU #	CRU
Arabic • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0883	1
Brazilian Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0884	1
Chinese-simplified • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005:	03T0885	1

Windows 7 Home Basic 32	FRU #	CRU
• MT 7033: • MT 7072: • MT 7079: • MT 7177:		
India English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0886	1
Russian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0887	1

Windows 7 Home Basic 32	FRU #	CRU
Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0888	1
Serbian-Latin • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0889	1
Turkish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03T0890	1

Windows 7 Home Basic 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0891	1

Windows 7 Home Premium 32 Recovery CD

Windows 7 Home Premium 32	FRU #	CRU
India English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0892	1
English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498:	03T0893	1

Windows 7 Home Premium 32	FRU #	CRU
• MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:		

Windows 7 Home Premium 64 Recovery CD

Windows 7 Home Premium 64	FRU #	CRU
Brazilian Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0919	1
Chinese-Simplified • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0920	1

Windows 7 Home Premium 64	FRU #	CRU
Chinese-Traditional • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0921	1
Czech • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0922	1
India English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03T0923	1

Windows 7 Home Premium 64	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
French • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0924	1
Hong Kong • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0925	1

Windows 7 Home Premium 64	FRU #	CRU
Italian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0926	1
Japanese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0927	1
Korean • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03T0928	1

Windows 7 Home Premium 64	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0929	1
US English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0930	1

Windows 7 Home Premium 64	FRU #	CRU
C and L Nordics (DK/FI/SV/NO/EN) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0931	1
C and L EMEA (NL/FR/GR/IT/EN) • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0932	1

Windows 7 Professional 64 Recovery CD

Windows 7 Professional 64	FRU #	CRU
Arabic • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514:	03T0894	1

Windows 7 Professional 64	FRU #	CRU
• MT 4518: • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:		
Brazilian Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A2P F2P F3P F4P F8P F9P G1P G2P • MT 7005: • MT 7033: A2P • MT 7072: • MT 7079: • MT 7177:	03T0895	1
Chinese-Simplified • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2C • MT 7072: • MT 7079: • MT 7177:	03T0896	1

Windows 7 Professional 64	FRU #	CRU
Chinese-Traditional • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2V • MT 7072: • MT 7079: • MT 7177:	03T0897	1
Czech • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0898	1
India English • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2Q	03T0899	1

Windows 7 Professional 64	FRU #	CRU
• MT 7072: A1G • MT 7079: • MT 7177:		
French • MT 4466: A1G • MT 4477: • MT 4480: A4F A5F A6G A7G B1F B2G B3F B4F B5F B8F B9F C1F • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A2G C8F C4G C5G C6G C7G D6F D7FD8G D9G E4F E5F • MT 7005: • MT 7033: A2G A2F • MT 7072: A1G • MT 7079: • MT 7177:	03T0900	1
Greek • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0901	1

Windows 7 Professional 64	FRU #	CRU
German • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A2G C4G C5G C6G C7G D8G D9G • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0902	1
Hebrew • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0903	1
Hong Kong • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2B	03T0904	1

Windows 7 Professional 64	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Hungary • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0905	1
Italian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A2G C4G C5G C6G C7G D8G D9G • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0906	1

Windows 7 Professional 64	FRU #	CRU
Japanese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518:A9J B1J E7J E8J G9J H1J • MT 7005: • MT 7033: A2J • MT 7072: • MT 7079: • MT 7177:	03T0907	1
Polish • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0908	1
Portuguese • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G	03T0909	1

Windows 7 Professional 64	FRU #	CRU
• MT 7072: A1G • MT 7079: • MT 7177:		
Romanian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0910	1
Slovakian • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0911	1

Windows 7 Professional 64	FRU #	CRU
Spanish • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G B8S • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A2G C4G C5G C6G C7G D8G D9G • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0912	1
Serbian-Latin • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0913	1
Turkish • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: A2G	03T0914	1

Windows 7 Professional 64	FRU #	CRU
• MT 7072: A1G • MT 7079: • MT 7177:		
US English • MT 4466: A1G • MT 4477: • MT 4480: A3M A4U A5U B1U A6G A7G B2G B3U B4U B5U B8U B9U C1U • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: C2M C3M C8M D2M D5M • MT 4518: C8U B8M B9M C1M C3M D3H D6U D7U E1M E2M E3M E4UE5U F5M F6M F7M G3M G4M G5M G6M • MT 7005: • MT 7033: A2U A2F A2L A2G A2M A2A A2QA2H A2R A2E • MT 7072: A1G • MT 7079: • MT 7177:	03T0915	1
C and L Nordics (DK/FI/SV/NO/EN) • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A2G C4G C5G C6G C7G D8G D9G • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0916	1

Windows 7 Professional 64	FRU #	CRU
C and L EMEA (NL/FR/GR/IT/EN) • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A2G C4G C5G C6G C7G D8G D9G • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0917	1
C and L Croatian (EN/SL/CR) • MT 4466: A1G • MT 4477: • MT 4480: A6G A7G B2G • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: A2G C4G C5G C6G C7G D8G D9G • MT 7005: • MT 7033: A2G • MT 7072: A1G • MT 7079: • MT 7177:	03T0918	1

Windows XP Professional 32 Recovery CD

Note: The Windows XP Professional recovery DVDs are available only for models with a valid Microsoft Windows XP Professional certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows XP Professional preinstalled from the factory, but has either a Windows 7 or Windows Vista COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

Windows XP Professional 32	FRU #	CRU
Japanese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0501	1
English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0502	1
Brazil Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03T0723	1

Windows XP Professional 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Traditional Chinese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0724	1
Czech • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0725	1

Windows XP Professional 32	FRU #	CRU
Denmark • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0726	1
Finnish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0727	1
French • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03T0737	1

Windows XP Professional 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
German • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0728	1
Hong Kong • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0729	1

Windows XP Professional 32	FRU #	CRU
Italian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0730	1
Norwegian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0731	1
Polish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03T0732	1

Windows XP Professional 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Russian • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0733	1
Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0734	1

Windows XP Professional 32	FRU #	CRU
Swedish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0735	1
Turkish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T0736	1

Windows XP Professionally Generic 32 Recovery CD

Note: The Windows XP Professional recovery DVDs are available only for models with a valid Microsoft Windows XP Professional certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows XP Professional preinstalled from the factory, but has either a Windows 7 or Windows Vista COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

Windows XP Professionally Generic 32	FRU #	CRU
Simplified Chinese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03W7477	1
Greek • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03W7483	1
Hungary • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03W7486	1

Windows XP Professionally Generic 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
Korean • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03W7489	1
Dutch • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03W7490	1
Portuguese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514:	03W7493	1

Windows XP Professionally Generic 32	FRU #	CRU
• MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:		

Windows Vista Business 32 Recovery CD

Note: The Windows Vista recovery DVDs are available only for models with a valid Microsoft Windows Vista certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows Vista Business or Windows Vista Ultimate preinstalled from the factory, but has a Windows 7 COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

Windows Vista Business 32	FRU #	CRU
India English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T1311	1
US English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072:	03T1312	1

Windows Vista Business 32	FRU #	CRU
• MT 7079: • MT 7177:		

Windows Vista Home Basic 32 Recovery CD

Note: The Windows Vista recovery DVDs are available only for models with a valid Microsoft Windows Vista certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows Vista Business or Windows Vista Ultimate preinstalled from the factory, but has a Windows 7 COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

Windows Vista Home Basic 32	FRU #	CRU
India English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T1313	1
French • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T1314	1

Windows Vista Home Basic 32	FRU #	CRU
Japanese • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T1315	1
Spanish • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T1316	1
US English • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033:	03T1317	1

Windows Vista Home Basic 32	FRU #	CRU
• MT 7072: • MT 7079: • MT 7177:		
C and L Nordics: DK/FI/SV/NO/EN • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T1318	1
C and L EMEA: NL/FR/GR/IT/EN • MT 4466: • MT 4477: • MT 4480: • MT 4485: • MT 4498: • MT 4503: • MT 4512: • MT 4514: • MT 4518: • MT 7005: • MT 7033: • MT 7072: • MT 7079: • MT 7177:	03T1319	1

Chapter 11. Additional service information

This chapter provides additional information that the service representative might find helpful.

Security features

Security features in this section include the following:

- Passwords
- Vital Product Data

Hardware-controlled passwords

Use the Setup Utility program to set the hardware controlled passwords. For more information about passwords, see “Using passwords” on page 43.

Operating system password

Note: This section applies only to computer models that have an operating system preinstalled from Lenovo.

An operating system password is very similar to a power-on password and denies access to the computer by an unauthorized user when the password is activated. The computer is unusable until the correct password is entered and recognized by the computer.

Vital Product Data

Each computer has a unique Vital Product Data (VPD) code stored in the nonvolatile memory on the system board. After you replace the system board, the VPD must be updated. To update the VPD, see “Updating (flashing) the BIOS from a disc” on page 475.

BIOS levels

An incorrect level of BIOS can cause false errors and unnecessary FRU replacement. Use the following information to determine the current level of BIOS installed in the computer, the latest BIOS available for the computer, and where to obtain the latest level of BIOS.

- To determine the current level of BIOS:
  - Start the Setup Utility program.
  - See **BIOS Revision Level** on the Main setup screen.
- Sources for obtaining the latest level BIOS available
  1. Lenovo support web site:
     http://www.lenovo.com/support
  2. Lenovo Customer Support Center
  3. Levels 1 and 2 Support

To update (flash) the BIOS, see “Updating (flashing) the BIOS from a disc” on page 475.

Updating (flashing) the BIOS from a disc

This section provides instructions on how to update (flash) the BIOS from a disc.

© Copyright Lenovo 2011, 2012

Note: You can download a self-starting bootable disc image (known as an ISO image) with the system program updates to create a system-program-update disc. Go to:
http://www.lenovo.com/support

To update (flash) the BIOS from a disc, do the following:

1. Turn off your computer.
2. Repeatedly press and release the F12 key when turning on the computer. When the **Startup Device Menu** opens, release the F12 key.
3. On the **Startup Device Menu**, select the desired optical drive as the startup device. Then, insert the disc into this optical drive and press Enter. The update begins.
4. When prompted to change the serial number, it is suggested that you do not make this change by pressing N. However, if you do want to change the serial number, press Y, then type in the serial number and press Enter.
5. When prompted to change the machine type and model, it is suggested that you do not make this change by pressing N. However, if you do want to change the machine type and model, press Y, then type in the machine type and model and press Enter.
6. Follow the instructions on the screen to complete the update. After the update is completed, remove the disc from the optical drive.

Updating (flashing) the BIOS from your operating system

Note: Because Lenovo makes constant improvements to its Web sites, the Web page contents are subject to change without notice, including the contents referenced in the following procedure.

To update (flash) the BIOS from your operating system, do the following:

1. Go to http://www.lenovo.com/support.
2. Do the following to locate the downloadable files for your machine type:
   a. Click **Download & Drivers**.
   b. In the left pane, click **Downloads and drivers**.
   c. From the **Brand** drop-down list box, select **Desktops**.
   d. From the **Family** drop-down list box, select the family name.
   e. Click **Continue**.
   f. From the **Refine results** drop-down list box, select **BIOS**.
   g. Click the BIOS update link.
3. Click the TXT file that contains the instructions for updating (flashing) the BIOS from your operating system.
4. Print these instructions. This is very important because these instructions will not be displayed on the screen after the download begins.
5. Follow the printed instructions to download, extract, and install the update.

Recovering from a POST and BIOS update failure

If the power to your computer is interrupted while the POST and BIOS is being updated, your computer might not restart correctly. If this happens, perform the following procedure to recover from the POST and BIOS update failure. This procedure is commonly called Boot-block Recovery.

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Remove the computer cover. See “Removing the computer cover” on page 79.

3. Locate the Clear CMOS /Recovery jumper on the system board. See “Locating parts on the system board” on page 77.
4. Remove any cables that impede access to the Clear CMOS /Recovery jumper.
5. Move the jumper from the standard position (pin 1 and pin 2) to the maintenance position (pin 2 and pin 3).
6. Reconnect any cables that were disconnected and reinstall the PCI card if removed.
7. Reinstall the computer cover and reconnect the power cords for the computer and monitor to electrical outlets. See “Completing the parts replacement” on page 113.
8. Turn on the computer and then insert the POST and BIOS update (flash update) disc into the optical drive. The recovery session begins. The recovery session will take two to three minutes. During this time, you will hear a series of beeps.
9. After the recovery session is completed, the series of beeps will end, and the system will automatically turn off. Remove the disc from the optical drive before the system completely turns off.
10. Repeat step 1 through step 4.
11. Move the Clear CMOS /Recovery jumper back to the standard position (pin 1 and pin 2).
12. Reconnect any cables that were disconnected and reinstall the PCI card if removed.
13. Reinstall the computer cover and reconnect any cables that were disconnected.
14. Turn on the computer to restart the operating system.

Power management

Power management reduces the power consumption of certain components of the computer such as the system power supply, processor, hard disk drives, and some monitors.

Advanced Configuration and Power Interface (ACPI) BIOS

Being an ACPI BIOS system, the operating system is allowed to control the power management features of the computer and the setting for Advanced Power Management (APM) BIOS mode is ignored. Not all operating systems support ACPI BIOS mode.

Automatic Power-On features

The Automatic Power-On features within the Power Management menu allow you to enable and disable features that turn on the computer automatically.

- **RTC resume**: You can specify a date and time at which the computer will be turned on automatically. This can be either a single event or a daily event.
- **Wake on LAN**: If the computer has a properly configured token-ring or Ethernet LAN adapter card that is Wake on LAN-enabled and there is remote network management software, you can use the Wake on LAN feature. When you set Wake on LAN to **Enabled**, the computer will turn on when it receives a specific signal from another computer on the local area network (LAN).

Appendix A. Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service.

Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc.
1009 Think Place - Building One
Morrisville, NC 27560
U.S.A.
Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary.

Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk.

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.

© Copyright Lenovo 2011, 2012

Television output notice

The following notice applies to models that have the factory-installed television-output feature.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

European conformance CE mark

CE

Trademarks

The following terms are trademarks of Lenovo in the United States, other countries, or both:

Lenovo
The Lenovo logo
Rescue and Recovery
ThinkCentre
ThinkVantage

AMD, AMD Athlon, AMD Phenom, AMD Sempron, and combinations thereof are trademarks of Advanced Micro Devices, Inc.

Microsoft, Vista and Windows are trademarks of the Microsoft group of companies.

Wake on LAN is a registered trademark of International Business Machines Corporation in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.

Index

A

accessing
  system board components and drives 124
Administrator, password 44

B

battery, replacing 92, 133
boot-block recovery 476

C

cables, connecting 160
card reader, installing 88, 128
card reader, replacing 91
changing
  password 44
  startup device sequence 46
CMOS, clearing 45
components, internal 76, 118
computer cover
  opening 121
  removing 79
computer cover, reinstalling 113
connectors
  rear 75, 117
connectors, controls, indicators
  front 74, 116
considerations, passwords 44
CRU
  completing the installation 113, 160

D

deleting a password 44
devices, handling static-sensitive 78, 120
drives
  bays 78, 120
  specifications 78, 120

E

environment, operating 35–36
exiting, Setup Utility 47

F

failure, recovering from POST/BIOS 476
flashing the BIOS 475
front
  connectors, controls, indicators 74, 116
front audio and USB assembly, replacing 110, 159
front bezel
  removing, reinstalling 80, 122
front fan assembly, replacing 107

H

hard disk drive, replacing 103, 134
heat sink and fan assembly
  replacing 95, 139

I

installing, replacing
  memory module 84, 125
  PCI card 81, 126
internal speaker, replacing 111, 155

L

Lenovo Solution Center 39
Lenovo ThinkVantage Toolbox 39
locating components 76, 118

M

memory module 84, 125
  installing, replacing 84, 125
microprocessor
  replacing 97, 147

O

opening computer cover 121
optical drive, installing or replacing 137
optical drive, replacing 86

P

parts replacement, completing 113, 160
password
  Administrator 44
  considerations 44
  setting, changing, deleting 44
passwords
  erasing 45
  lost or forgotten 45
passwords, using 43
PC-Doctor for DOS 40
PCI card 81, 126
  installing, replacing 81, 126
power supply assembly
  replacing 93, 142
power-on password 44
productivity center, ThinkVantage 34

© Copyright Lenovo 2011, 2012

R

rear connectors 75, 117
rear fan assembly, replacing 108
recovering
  from a POST/BIOS update failure 476
recovery
  boot-block 476
removing
  computer cover 79
removing, reinstalling
  front bezel 80, 122
replacing
  battery 92, 133
  card reader 91
  front audio and USB assembly 110
  hard disk drive 103, 134
  heat sink and fan assembly 95, 139
  microprocessor 97, 147
  power supply assembly 93, 142

S

security
  enabling or disabling 45
selecting
  startup device 46
  temporary startup device 46
Set Power-On Password 44
setting
  password 44
settings
  changing 43
  viewing 43
Setup Utility program 43
Setup Utility program, starting 43
Setup Utility, exiting 47
starting the Setup Utility program 43
startup device 46
  sequence, changing 46
  temporary, selecting 46
static-sensitive devices, handling 78, 120
system board
  connectors 77, 119
  locating parts 77, 119
system board components and drives
  accessing 124
system fan assembly, replacing 153

T

temporary startup device 46
the BIOS, updating (flashing) 475–476
ThinkVantage productivity center 34

U

updating
  (flashing) the BIOS 475
updating (flashing) the BIOS 476
using
  passwords 43
  Setup Utility program 43

V

viewing and changing settings 43



Part Number: 0A23284

Printed in USA

(1P) P/N: 0A23284

