

IBM TotalStorage



SFP Module Option Installation Guide

IBM TotalStorage



SFP Module Option Installation Guide

Note

Before using this information and the product it supports, be sure to read the general information under "Warranty information" on page 33 and "Notices" on page 45.

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This edition replaces *IBM Small Form-Factor Pluggable Module Option Installation Information* (59P5787).

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Safety information



Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الأمنية

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

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

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

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

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

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

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

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

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

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

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

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

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

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítajte Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

Class 1 Laser Product
Laser Klasse 1
Laser Klass 1
Luokan 1 Laserlaite
Appareil A Laser de Classe 1
IEC 825-1:1993 CENELEC EN 60 825

Statement 3 

CAUTION:

When laser products (such as CD-ROMs, DVD 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.

About this document

This document provides information about the IBM® TotalStorage® small form-factor pluggable (SFP) module option, including instructions for installing and removing SFP modules.

Keep this document. It contains the warranty information for your option.

Who should read this document

This document is intended for system operators and service technicians who have extensive knowledge of Fibre Channel and network technology.

How this document is organized

Chapter 1, “Small form-factor pluggable module option introduction”, on page 1 provides an introduction to the SFP module option.

Chapter 2, “Installation and removal instructions”, on page 3 contains information about installing and removing the SFP module.

Chapter 3, “Translated safety notices”, on page 7 contains translations of the safety notices.

Notices used in this document

This document contains the following notices that are designed to highlight key information:

- **Note:** These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information that might help you avoid inconvenient or problem situations.
- **Attention:** These notices indicate possible damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.
- **Caution:** These statements indicate situations that can be potentially hazardous to you. A caution statement is placed just before the description of a potentially hazardous procedure step or situation.
- **Danger:** These statements indicate situations that can be potentially lethal or extremely hazardous to you. A danger statement is placed just before the description of a potentially lethal or extremely hazardous procedure step or situation.

Getting information, help, and service

If you need help, service, or technical assistance or want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your system, and whom to call for service, if it is necessary.

Before you call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system is turned on.
- Use the troubleshooting information in your system documentation and use the diagnostic tools that come with your system.
- Check for technical information, hints, tips, and new device drivers at the following Web site:
www.ibm.com/storage/techsup.htm
- Use an IBM discussion forum on the IBM Web site to ask questions.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the documents that are provided with your system and software. The information that comes with your system also describes the diagnostic tests that you can perform. Most operating systems and programs come with information that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the information for the operating system or program.

Using the documentation

Information about the system and preinstalled software, if any, is available in the documents that come with your system. This includes printed documents, online documents, readme files, and help files. See the troubleshooting information in your system documentation for instructions for using the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software.

Web sites

IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates.

- For FAST information, go to the following Web site:
www.ibm.com/storage/techsup.htm
 The support page has many sources of information and ways for you to solve problems, including:
 - Diagnosing problems, using the IBM Online Assistant
 - Downloading the latest device drivers and updates for your products
 - Viewing frequently asked questions (FAQ)
 - Viewing hints and tips to help you solve problems
 - Participating in IBM discussion forums
 - Setting up e-mail notification of technical updates about your products
- You can order publications through the IBM Publications Ordering System at:
www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi/
- For the latest information about IBM @server xSeries™ products, services, and support, go to the following Web site:
www.ibm.com/eserver/xseries/
- For the latest information about IBM @server pSeries™ products, services, and support, go to the following Web site:
www.ibm.com/eserver/pseries/
- For the latest information about the IBM IntelliStation® information, go to the following Web site:
www.ibm.com/pc/intellistation/

- For the latest information about operating system and HBA support, clustering support, SAN fabric support, and Storage Manager feature support, see the TotalStorage FASTT Interoperability Matrix at the following Web site:
www.storage.ibm.com/disk/fastt/pdf/0217-03.pdf

Software service and support

Through IBM Support Line, for a fee you can get telephone assistance with usage, configuration, and software problems with servers, workstations, and appliances. For information about which products are supported by Support Line in your country or region, go to the following Web site:

www.ibm.com/services/sl/products/

For more information about the IBM Support Line and other IBM services, go to the following Web sites:

- www.ibm.com/services/
- www.ibm.com/planetwide/

Hardware service and support

You can receive hardware service through IBM Integrated Technology Services or through your IBM reseller, if your reseller is authorized by IBM to provide warranty service. Go to the following Web site for support telephone numbers:

www.ibm.com/planetwide/

In the U.S. and Canada, hardware service and support is available 24 hours a day, 7 days a week. In the U.K., these services are available Monday through Friday, from 9 a.m. to 6 p.m.

Fire suppression systems

A fire suppression system is the responsibility of the customer. The customer's own insurance underwriter, local fire marshal, or a local building inspector, or both, should be consulted in selecting a fire suppression system that provides the correct level of coverage and protection. IBM designs and manufactures equipment to internal and external standards that require certain environments for reliable operation. Because IBM does not test any equipment for compatibility with fire suppression systems, IBM does not make compatibility claims of any kind nor does IBM provide recommendations on fire suppression systems.

How to send your comments

Your feedback is important to help us provide the highest quality information. If you have any comments about this document, you can submit them in one of the following ways:

- E-mail

Submit your comments electronically to:

starpubs@us.ibm.com

Be sure to include the name and order number of the document and, if applicable, the specific location of the text that you are commenting on, such as a page number or table number.

- Mail or fax

Fill out the Readers' Comments form (RCF) at the back of this document and return it by mail or fax (1-800-426-6209) or give it to an IBM representative. If the RCF has been removed, you can address your comments to:

International Business Machines Corporation
RCF Processing Department
Dept. M86/Bldg. 050-3
5600 Cottle Road
San Jose, CA 95193-0001
U.S.A

Chapter 1. Small form-factor pluggable module option introduction

The IBM small form-factor pluggable (SFP) module option is required to connect a fiber-optic cable with an LC connector to a Fibre Channel device. SFP modules are hot-pluggable, which means that you can connect servers and storage devices to the arbitrated loop without turning off the mini-hub, switch, or any connected devices.

If you remove an SFP module from a mini-hub or switch port, that port is automatically bypassed. The remaining ports continue to operate normally without any degradation of system performance. Similarly, if you connect an SFP module to a mini-hub or switch, it automatically becomes a node on the loop when valid Fibre Channel communication data is received from the connected device.

One of the following two types of SFP modules comes with this option: plastic tab and wire.

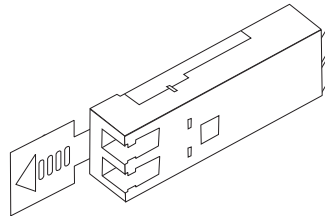


Figure 1. SFP module plastic tab variety

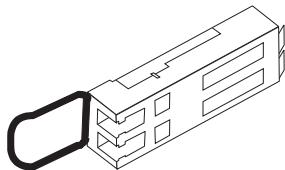


Figure 2. SFP module wire variety

Note: The illustrations in this document might differ slightly from your hardware.

Chapter 2. Installation and removal instructions

Statement 3

CAUTION:

When laser products (such as CD-ROMs, DVD 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.

Class 1 Laser Product
Laser Klasse 1
Laser Class 1
Luokan 1 Laserlaite
Appareil A Laser de Classe 1
IEC 825-1:1993 CENELEC EN 60 825

Installing an SFP

Use the following procedure to install an SFP module.

1. For both the wire variety and plastic tab variety SFPs, remove the protective cap from the SFP module, as shown in Figure 3.

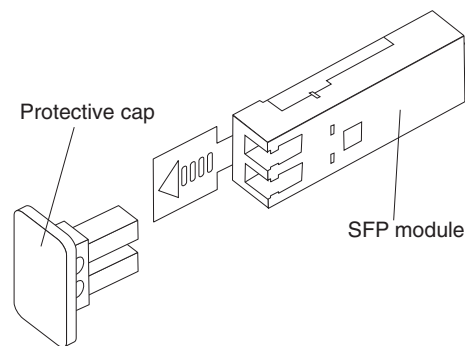


Figure 3. SFP protective cap

2. Carefully slide the SFP module into a mini-hub or switch, as shown in Figure 4 on page 4 and Figure 5 on page 4.

Note: You might need to remove a protective cap from the node before you can insert the SFP module.

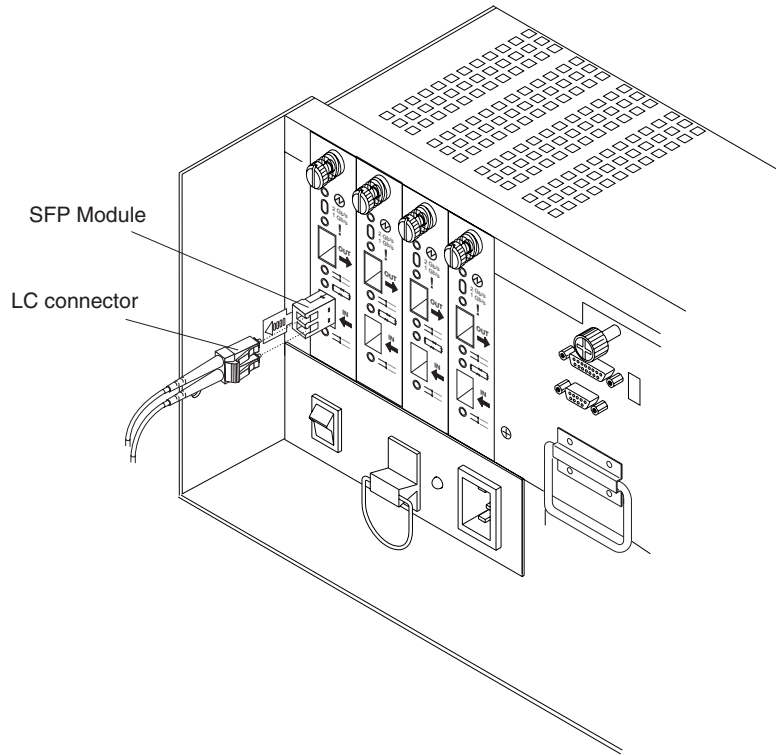


Figure 4. Plastic tab variety SFP installed in a FAST900 mini-hub

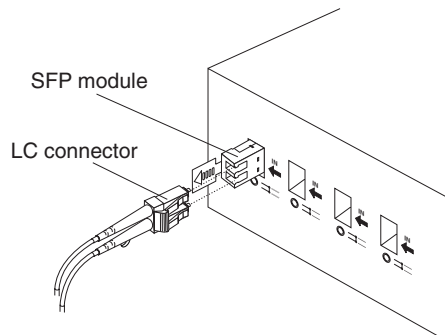


Figure 5. Plastic tab variety SFP module installed in a switch

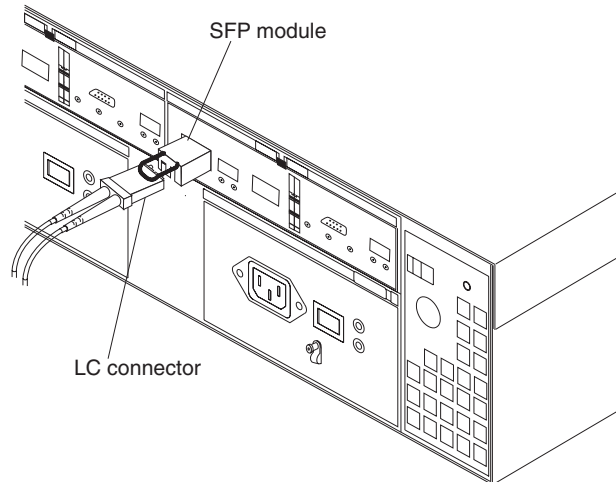


Figure 6. Wire variety SFP module installed in a FAST600 controller

Attention: To avoid damage to your fiber-optic interface cables, follow these guidelines:

- Do not route the cable along a folding cable-management arm.
 - For devices on slide rails, leave enough slack in the cable so that it does not bend to a radius less than 38 mm (1.5 in.) when extended or become pinched when retracted.
 - Route the cable away from areas where it can be damaged by other devices in the rack cabinet.
 - Do not use plastic cable ties in place of the cable straps that are provided.
 - Do not overtighten the cable straps or bend the cables to a radius less than 38 mm (1.5 in.).
 - Do not put excess weight on the cable at the connection point. Be sure that the cable is well supported.
3. Plug a fiber-optic cable LC connector into the SFP module. Refer to the documentation that comes with your fiber-optic cable for detailed information.

Removing an SFP

Use the following procedure to remove an SFP module:

Attention: To avoid damage to the cable or to the SFP module, make sure you unplug the LC-LC Fibre Channel cable *before* you remove the SFP module.

1. Remove the fiber-optic cable from the SFP module; then, replace the protective caps on the cable connector.
2. Unlock the SFP module latch:
 - For SFP modules with plastic tabs, unlock the SFP module latch by pulling the plastic tab outward 10° while you remove the SFP module, as shown in Figure 7 on page 6.

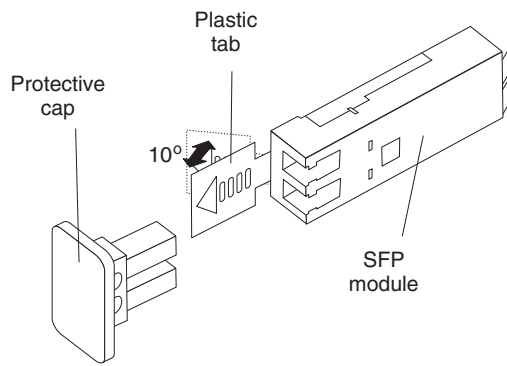


Figure 7. Unlocking the SFP module latch - plastic tab variety

- For SFP modules with wire tabs, unlock the SFP module latch by pulling the wire latch outward 90°, as shown in Figure 8.

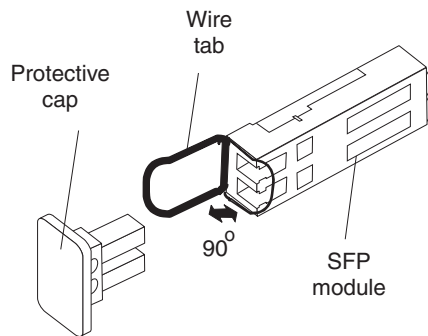


Figure 8. Unlocking the SFP module latch - wire tab variety

3. Replace the protective cap on the SFP module.

For more information, refer to the documentation that comes with the specific Fibre Channel devices.

Chapter 3. Translated safety notices

This section contains translated versions of the safety notices that are in this document.

Arabic

خطارة 3 3



تنبيه:

أثناء تركيب منتجات الليزر (مثل CD-ROMs أو وحدة تشغيل DVD أو أجهزة fiber Optic أو وحدات الإرسال) يجب مراعاة الآتي:

- لا تتزع الأعطية. قد ينتج عن نزاع لظاء 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 محدد هنا اللي انفجار أشعة شديدة الخطورة.



خطر!

تحتوي بعض منتجات الليزر على الفئة دايبودا ليزر مدمج من الفئة Class 3A أو

Class 3B. يجب مراعاة الآتي.

أشعة الليزر عند الفتح. لا تنظر إلى الشعاع أو إلى أي أجهزة مرئية وتجنب حدوث أي انفجار مباشر للشعاع.

Brazilian Portuguese

Instrução 3

CUIDADO:

Quando produtos a laser (unidades de CD-ROM, unidades de DVD, dispositivos de fibra ótica, transmissores, etc.) 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. Nenhuma peça localizada no interior do dispositivo pode ser consertada.
- 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 um diodo laser da Classe 3A ou Classe 3B embutido. Observe o seguinte:

Radiação de laser quando aberto. Não olhe diretamente para o raio a olho nu ou com instrumentos óticos, e evite exposição direta ao raio.

声明 3



警告:

安装激光产品（如 CD-ROM、DVD 驱动器、光纤设备或送话器）时，应注意以下事项：

不要拆除外盖。拆除激光产品的外盖可能会导致激光辐射的危险，本设备中没有用户可维修的部件。

非此处指定的其它控制、调整或与性能有关的操作都有可能导致激光辐射的危险。



危险

某些激光产品中包含内嵌的 3A 级或 3B 级激光二极管。请注意以下事项。

打开时会产生激光辐射。不要直视光束，不要使用光学仪器直接观看光束，避免直接暴露于光束之下。

Chinese, traditional

聲明 3



注意：

安裝雷射產品 (如 CD-ROM、DVD 光碟機、光纖裝置或發射器) 時，請注意下列事項：

- 請勿移開蓋子。移開雷射產品的蓋子，您可能會暴露於危險的雷射輻射之下。裝置中沒有需要維修的組件。
- 不依此處所指示的控制、調整或處理步驟，您可能會暴露於危險的輻射之下。



危險

有些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：

開啓時會產生雷射輻射。請勿凝視光束，不要使用光學儀器直接觀察，且應避免直接暴露在光束下。

- Izjava br. 3



OPREZ:

Prilikom instalacije laserskih proizvoda (kao na pr. CD-ROM, DVD drive, uređaja s optikom ili transmitera) pridržavajte se slijedećeg:

- * ne skidajte pokrov s uređaja, jer se možete izložiti opasnoj laserskoj radijaciji.
- Uređaj ne sadrži dijelove koji su predviđeni za podešavanje.
- * podešavanje uređaja ili rad na način koji nije opisan ovim uputama može vas izložiti opasnoj laserskoj radijaciji.



OPASNOST

Neki laserski uređaji koriste laserske diode klase 3A ili 3B.
Upamtite slijedeće:

Prisutno lasersko zračenje kod otvorenog uređaja. Ne gledajte u snop zraka direktno ili kroz optički uređaj; izbjegavajte izlaganje djelovanju zraka!

- Instrukce 3



POZOR:

Pokud jsou instalovány laserové produkty (jako např. jednotky CD-ROM nebo DVD, optická vlákna nebo vysílače), věnujte pozornost následujícímu:

- Neodstraňujte kryty. Odstranění krytů z laserového produktu může mít za následek vyzařování nebezpečného laserového záření. Uvnitř zařízení nejsou žádné opravitelné díly.
- Budete-li užívat ovládací prvky nebo provádět úpravy či procedury jiným než zde popsaným způsobem, můžete se vystavit nebezpečnému záření.



NEBEZPEČÍ

Některé laserové produkty obsahují vloženou laserovou diodu třídy 3A nebo třídy 3B. Uvědomte si následující.

Při otevření nebezpečí ozáření laserem. Nedívejte se přímo do paprsků (ani pomocí optických nástrojů) a vyvarujte se přímého ozáření paprsky.

Forskrift 3

Pas på!:

Bemærk følgende, når der er installeret laserprodukter, f.eks. cd- eller dvd-drev, lyslederenheder eller sendere:

- Dækslerne må ikke fjernes. Fjernelse af laserprodukternes dæksler kan resultere i alvorlig strålingsfare. Der er ingen dele, der kan udskiftes eller repareres.
- Brug af justeringsknapper eller udførelse af justeringer eller andre procedurer end dem, der er beskrevet her, kan resultere i alvorlig strålingsfare.



Fare!

Visse laserprodukter indeholder en indbygget klasse 3A eller klasse 3B laserdiode. Vær opmærksom på følgende:

Hvis disse sikkerhedsforskrifter ikke overholdes, og drevet åbnes, er der laserstråling: Se ikke direkte ind i laserstrålen, og benyt ikke optiske instrumenter til at se ind i laserstrålen. Undgå direkte laserstråling.

Dutch

Voorschrift 3

WAARSCHUWING:

Als u laserproducten (bijvoorbeeld CD-ROM-stations, DVD-stations, glasvezelapparatuur of -zenders) installeert, let dan op het volgende:

- Verwijder de kappen niet. Als u de kappen van het laserproduct opent, kunt u worden blootgesteld aan gevaarlijke laserstraling. In het apparaat bevinden zich geen onderdelen die onderhoud nodig hebben.
- Het wijzigen van instellingen of het uitvoeren van procedures anders dan hier is beschreven, kan leiden tot blootstelling aan gevaarlijke straling.



GEVAAR

Bepaalde laserproducten bevatten een ingebouwde laserdiode van categorie 3A of 3B. Let op het volgende!

LASERSTRALING INDIEN GEOPEND. Kijk niet in de laserstraal en vermijd direct contact met de laserstraal.

Turvaohje 3

Varoitus:

Jos asennat järjestelmään lasertuotteita, kuten CD- tai DVD-asemia, kuituoptisia laitteita tai lähettämiä, noudata seuraavia ohjeita:

- Älä irrota kansia. Lasertuotteen kansien irrotus voi altistaa vaaralliselle lasersäteilylle. Laite ei sisällä huollettaviksi tarkoitettuja osia.
- Muut kuin tässä julkaisussa mainitut säädöt tai toimet voivat altistaa vaaralliselle säteilylle.



VAARA

Joissakin lasertuotteissa on luokan 3A tai 3B laseriodi. Noudata seuraavia ohjeita.

VARO! Avattaessa olet alttiina lasersäteilylle. Älä katso suoraan säteeseen paljaalla silmällä tai optisella välineellä. Säteeseen katsominen voi vahingoittaa silmiäsi.

Notice NCE 3 

ATTENTION:

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

- N'ouvrez pas ces produits pour éviter une exposition directe au rayon laser. Vous ne pouvez effectuer aucune opération de maintenance à l'intérieur.
- 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 document.



DANGER

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

Rayonnement laser lorsque le carter est ouvert. Évitez de regarder fixement le faisceau ou de l'observer à l'aide d'instruments optiques. Évitez une exposition directe au rayon.

Hinweis 3

ACHTUNG:

Wenn ein Laserprodukt (z. B. CD-ROM-Laufwerke, DVD-Laufwerke, Einheiten mit Glasfaserkabeln oder Transmitter) installiert ist, beachten Sie folgendes.

- Das Entfernen der Abdeckungen des CD-ROM-Laufwerks kann zu gefährlicher Laserstrahlung führen. Es befinden sich keine Teile innerhalb des CD-ROM-Laufwerks, die vom Benutzer gewartet werden müssen. Die Verkleidung des CD-ROM-Laufwerks nicht öffnen.
- Steuer- und Einstellelemente sowie Verfahren nur entsprechend den Anweisungen im vorliegenden Handbuch einsetzen. Andernfalls kann gefährliche Laserstrahlung auftreten.



VORSICHT

Manche CD-ROM-Laufwerke enthalten eine eingebaute Laserdiode der Klasse 3A oder 3B. Die nachfolgend aufgeführten Punkte beachten.

Laserstrahlung bei geöffneter Tür. Niemals direkt in den Laserstrahl sehen, nicht direkt mit optischen Instrumenten betrachten und den Strahlungsbereich meiden.

Δήλωση 3



ΠΡΟΣΟΧΗ:

Όταν εγκαθιστώνται προϊόντα laser (όπως μονάδες CD-ROM, μονάδες DVD, συσκευές οπτικών ινών ή πομποί), σημειώνονται τα ακόλουθα:

- Μην αφαιρείτε τα καλύμματα. Η αφαίρεση των καλυμμάτων ενός προϊόντος laser μπορεί να έχει ως αποτέλεσμα την έκθεση σε επικίνδυνη ακτινοβολία laser. Δεν υπάρχουν στο εσωτερικό της συσκευής εξαρτήματα η συντήρηση των οποίων μπορεί να γίνει από το χρήστη.
- Η διαφορετική από την περιγραφόμενη χρήση κουμπιών και ρυθμιστών ή εκτέλεση διαδικασιών μπορεί να έχει ως αποτέλεσμα την έκθεση σε επικίνδυνη ακτινοβολία.



ΚΙΝΔΥΝΟΣ

Ορισμένα προϊόντα laser περιέχουν ενσωματωμένη δίοδο laser Κατηγορίας 3A ή Κατηγορίας 3B. Σημειώνονται τα ακόλουθα:

Υπάρχει ακτινοβολία laser όταν είναι ανοικτό. Μην κοιτάτε στην κατεύθυνση της δέσμης, μην κοιτάτε απευθείας με οπτικά όργανα και αποφεύγετε την άμεση έκθεση στη δέσμη.

הודעה 3



זהירות:

בשמתקנים מוצרי ליזר (כגון כונני CD-ROM , כונני DVD , התקני סיכים אופטיים או משדדיים), יש לשים לב לדברים האלה:

אל תסירו את המכסים. הסרת המכסים של מוצר הלייזר עלולה לגרום לחשיפה לקרינת לייזר מסוכנת אין בתור ההתקן חלקים שניתן למפל בהם. שימוש בבקורות או בכיוונוניים או ביצוע נהלים שונים מאלה המפורטים להלן עלול לגרום לחשיפה לקרינה מסוכנת



סכנה:

מוצרי לייזר מסוימים מכילים דיודת לייזר משוכצת מסיווג 3A או מסיווג 3B. שימו לב לדברים האלה:

קרינת לייזר בזמן הפתיחה. אל תביטו לתוך הקרן, אל תסתכלו עליה ישירות במדת מכשירים אופטיים, והימנעו מחשיפה ישירה לקרן.

- 3. ismertető



FIGYELEM:

Lézeres termékek (például CD-ROM és DVD meghajtók, illetve optikai eszközök vagy átalakítók) telepítésekor vegye figyelembe a következőket:

– Ne távolítsa el a burkolatokat. A lézeres termékek burkolatának eltávolítása veszélyes lézersugárzást okozhat. A készülék belsejében nincsenek javítható alkatrészek.

– A leírásban meghatározottaktól eltérő beállítások, eljárások vagy tevékenységek veszélyes sugárzást okozhatnak.



VESZÉLY

Néhány lézeres termék beépített 3A vagy 3B osztályú lézerciódát tartalmaz. Vegye figyelembe a következőket.

Nyitott állapotban lézersugárzás válik szabaddá. A sugárba ne nézzen bele se szabad szemmel, se optikai eszközön keresztül, és kerülje vele az érintkezést.

Avviso 3

ATTENZIONE:

Quando si installano prodotti laser come, ad esempio, le unità DVD, CD-ROM, a fibre ottiche o trasmettitori, prestare attenzione a quanto segue:

- Non rimuovere i coperchi. L'apertura dei coperchi di prodotti laser può determinare l'esposizione a radiazioni laser pericolose. All'interno delle 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

Alcuni prodotti laser contengono all'interno un diodo laser di Classe 3A o Classe 3B. Prestare attenzione a quanto segue:

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

・記述 3

注意

レーザー製品 (CD-ROM、DVD、または光ファイバー装置または送信器など) が組み込まれている場合は、下記に御注意ください。

- ここに記載されている制御方法、調整方法、または性能を超えて使用すると、危険な放射線を浴びる可能性があります。
- ドライブのカバーを開けると、危険な放射線を浴びる可能性があります。ドライブの内部に修理のために交換可能な部品はありません。カバーを開けないでください。

危険

一部 CD-ROM ドライブは、Class 3A または Class 3B レーザー・ダイオードを使用しています。次の点に注意してください。

CD-ROMドライブのカバーを開けるとレーザーが放射されます。光線を見つめたり、光学器械を使って直接見たりしないでください。また直接光線を浴びないようにしてください。

경고문 3



주의:

레이저 제품(CD-ROMs, DVD 드라이브, 광 장치 또는 트랜스미터 등과 같은)이 설치되어 있을 경우 다음을 유의하십시오.

- 덮개를 제거하지 마십시오. 레이저 제품의 덮개를 제거했을 경우 위험한 레이저 광선에 노출될 수 있습니다. 이 장치 안에는 서비스를 받을 수 있는 부품이 없습니다.

- 여기에서 지정하지 않은 방식의 제어, 조절 또는 실행으로 인해 위험한 레이저 광선에 노출될 수 있습니다.



위험

일부 레이저 제품에는 클래스 3A 또는 클래스 3B 레이저 다이오드가 들어 있습니다. 다음을 주의하십시오.

열면 레이저 광선에 노출됩니다. 광선을 주시하거나 광학 기계를 직접 쳐다보지 않도록 하고 광선에 노출되지 않도록 하십시오.

- Инструкција 3



ПРЕДУПРЕДУВАЊЕ:

Кога се инсталирани ласерски производи (како CD-ROM, DVD уреди, уреди за оптички влакна или трансмитери, забележете го следново:

* Не отстранувајте ги поклопците. Отстранувањето на поклопците на ласерските производи може да предизвика изложување на хазардно ласерско зрачење. Ви внатрешноста на производот не постојат делови кои можат да се сервисираат.

* Употребата на контрола или подесување или изведувањето процедури различни од овие специфицирани тука, може да предизвикаат изложување на хазардно зрачење.



ОПАСНОСТ

Некои ласерски продукти содржат вградена класа 3A или класа 3B ласерска диода. Забележете го следново.

Ласерско зрачење кога е отворено. Не загледувајте се во зракот, не гледајте директно со оптички инструменти или избегнувајте директно изложување на зракот.

Merknad 3 

ADVARSEL:

Når laserprodukter (for eksempel CD-ROM-stasjoner, DVD-stasjoner, fiberoptiske enheter eller elektromagnetiske sendere) er installert, må du være oppmerksom på dette:

- Ikke fjern dekslene. Hvis du tar av dekslene på laserproduktet, kan du utsettes for farlig laserstråling. Enheten inneholder ingen deler som kan repareres.
- Hvis du bruker styringsutstyr eller utfører justeringer eller rutiner som ikke er nevnt her, kan det føre til farlig stråling.



FARE

Noen laserprodukter inneholder innebygde laserdioder i klasse 3A eller 3B. Vær oppmerksom på dette:

Laserstråling når dekselet åpnes. Ikke stirr inn i laserstrålen, ikke se rett inn i strålen med et optisk instrument og unngå eksponering for strålen.

Instrukcja 3



ZAGROŻENIE:

Jeśli instalowane są produkty laserowe (takie jak napędy CD-ROM, DVD, urządzenia światłowodowe lub nadajniki), należy przestrzegać poniższych wskazówek:

- Nie należy zdejmować obudowy. Zdjęcie obudowy produktu laserowego może spowodować narażenie się na niebezpieczne promieniowanie laserowe. Urządzenie nie zawiera części wymagających obsługi.
- Używanie elementów sterujących, zmiana ustawień lub wykonywanie czynności innych niż tu określone może spowodować narażenie się na działanie niebezpiecznego promieniowania.



NIEBEZPIECZEŃSTWO

Niektóre produkty laserowe zawierają wbudowaną diodę laserową klasy 3A lub 3B.

Jeśli produkt jest otwarty, występuje emisja promieniowania laserowego. Nie należy patrzeć się na promień ani bezpośrednio, ani przez instrumenty optyczne; należy też unikać bezpośredniej ekspozycji na promieniowanie.

Nota 3 

CUIDADO:

Quando estão instalados produtos laser (tais como unidades de CD-ROM, unidades DVD, dispositivos de fibra óptica ou transmissores), tenha em atenção o seguinte:

- Não retire as tampas. A remoção das tampas do produto laser pode resultar na exposição a radiações laser perigosas. Nenhum componente interno requer qualquer ajuste ou manutenção por parte do utilizador.
- A utilização de controlos ou regulações ou a execução de procedimentos diferentes dos aqui especificados, pode resultar na exposição a radiações perigosas.



PERIGO

Alguns produtos laser apresentam um díodo laser da Classe 3A ou Classe 3B incorporado. Tenha em atenção o seguinte.

Radiação laser presente quando aberto. Não olhe fixamente, não observe directamente com instrumentos ópticos e evite a exposição directa ao feixe de raios laser.

- Положение 3



ОСТОРОЖНО:

Если у вас установлены лазерные продукты (устройства CD-ROM, DVD, оптоволоконные устройства или передатчики), то учтите следующее:

- Не снимайте крышки. При снятии крышки лазерного продукта можно подвергнуться опасному воздействию лазерного излучения. Внутри устройства нет узлов, подлежащих обслуживанию.
- Предпринимая действия (например, пытаться произвести настройку или регулировку аппаратуры и т.п.) в обход приведенных здесь инструкций, вы можете подвергнуться опасному воздействию лазерного излучения.



ОПАСНО

Некоторые лазерные продукты оснащены встроенным лазерным диодом Класса 3А или Класса 3В. Учтите следующее.

Открывая, берегитесь лазерного излучения. Не смотрите на луч, не разглядывайте его с помощью оптических Инструментов, а также избегайте прямого воздействия лазерного луча.

- Príkaz 3



VÝSTRAHA:

Pri inštalácii laserových výrobkov (ako napr. CD-ROM, DVD jednotiek, zariadení s optickým vláknom alebo vysieláčov) je potrebné vziať na vedomie nasledujúce:

- Neodstraňujte kryty. Odstránenie krytov z laserového výrobku môže viesť k vystaveniu sa nebezpečnému laserovému žiareniu. Vo vnútri zariadenia nie sú žiadne časti určené na údržbu.
- Použitie ovladačov alebo nastavení, alebo prevádzanie postupov iných ako tých ktoré sú presne určené v tomto dokumente, môžu viesť k vystaveniu sa nebezpečnému žiareniu.



NEBEZPEČENSTVO

Niektoré laserové výrobky obsahujú zabudovanú laserovú diodu triedy 3A alebo 3B. Je potrebné vziať na vedomie nasledujúce.

Laserové žiarenie, ak je otvorené. Nehľadte priamo do lúča, nepozerajte sa priamo s optickými nástrojmi, a vyhýbajte sa priamemu vystaveniu sa lúču.

· Navedba 3



SVARILO:

Kadar so nameščeni laserski proizvodi (kot npr. CD-ROMi, DVD pogoni, naprave z optičnimi vlakni ali oddajniki) pazite na naslednje:

- Ne odstranjajte pokrovov. Če odstranite pokrove z laserskega proizvoda, ste lahko izpostavljeni nevarnemu laserskemu sevanju. V tej napravi ni delov, ki bi jih bilo treba servisirati.
- Uporaba kontrol ali nastavitev oziroma izvajanje drugačnih postopkov, kot so tu navedeni, ima lahko za posledico izpostavitve nevarnemu



NEVARNOST

Nekateri laserski proizvodi vsebujejo vgrajene laserske diode razreda 3A ali razreda 3B. Bodite pozorni na naslednje.

Ko se odpre, obstaja lasersko sevanje. Ne glejte v žarek, ne glejte direktno z optičnimi instrumenti in izogibajte se direktnemu izpostavljanju žarku.

Declaración 3

PRECAUCIÓN:

Cuando instale productos láser (como, por ejemplo, CD-ROM, unidades DVD, dispositivos de fibra óptica o transmisores), tenga en cuenta las advertencias siguientes:

- No retire las cubiertas. Si retira las cubiertas del producto láser, puede quedar expuesto a radiación láser perjudicial. Dentro del dispositivo no existe ninguna pieza que requiera mantenimiento.
- El uso de controles o ajustes o la realización de procedimientos que no sean los que se han especificado aquí pueden dar como resultado una exposición perjudicial a las radiaciones.



PELIGRO

Algunos productos láser contienen un diodo de láser incorporado de Clase 3A o de Clase 3B. Tenga en cuenta la advertencia siguiente.

Cuando se abre, hay radiación láser. No mire fijamente el rayo ni lleve a cabo ningún examen directamente con instrumentos ópticos; evite la exposición directa al rayo.

Varningsmeddelande 3

VARNING:

Om du installerar laserprodukter (t.ex. CD- eller DVD-spelare, fiberoptikutrustning eller sändare) bör du tänka på följande:

- Ta inte bort kåpan. Om du tar bort kåpan från laserprodukten kan du utsättas för laserljus som kan vara farlig. Enheten innehåller inga delar som du kan justera eller reparera själv.
- Icke-rekommenderade ingrepp eller justeringar kan leda till att användare utsätts för laserljus som kan vara farlig.



FARA

En del laserprodukter innehåller en inkapslad laserdiod av Klass 3A eller Klass 3B. Observera följande.

Laserljus när enheten är öppen. Titta inte in i strålen, titta inte direkt med optiska instrument och undvik att utsättas direkt för strålen.

Warranty information

This section contains the warranty period for your product and the service and support that are provided by your warranty.

Warranty period

The warranty period varies by machine type and country or region.

Contact your place of purchase for warranty service information. Some IBM Machines are eligible for on-site warranty service depending on the country or region where service is performed.

Prior to on-site warranty service, you are required to go through problem determination with an IBM service specialist call center technician.

A warranty period of 3 years on parts and 1 year on labor means that IBM will provide warranty service without charge for:

1. parts and labor during the first year of the warranty period
2. parts only, on an exchange basis, in the second and third years of the warranty period. IBM will charge you for any labor it provides in performance of the repair or replacement.

The IBM Machine Warranties Web site at http://www.ibm.com/servers/support/machine_warranties/ contains a worldwide overview of the IBM Statement of Limited Warranty for IBM Machines, a glossary of terms used in the Statement of Limited Warranty, Frequently Asked Questions (FAQ), and links to Product Support Web pages. The IBM Statement of Limited Warranty is available from this Web site in 29 languages in Portable Document Format (PDF).

Machine - IBM Small Form-Factor Pluggable Module Option

Warranty period - Three Years

Problem determination

Prior to on-site warranty service, you are required to go through problem determination with an IBM service specialist call center technician. The service specialist will run diagnostic tests on the hardware and check the software.

Running diagnostics

The IBM service specialist will help you determine whether your equipment is functioning as specified. It might be necessary to isolate the failing xSeries, pSeries, Netfinity, or IntelliStation system; IBM component; or both from any active production environment to run diagnostics and perform defect-isolation programs. You are responsible for making the system, IBM component, or both available for running diagnostics and defect-isolation programs.

Checking software

The IBM service specialist will help you ensure that the correct BIOS code, firmware, device drivers, and other supporting IBM software are installed and correctly configured. It might be necessary to manually gather information about the relevant software levels or run IBM-approved utility programs to gather this information. It might be necessary to isolate the failing system from any active production environment to gather this information. You are responsible, with

assistance from the service specialist, for gathering this information. The IBM Statement of Limited Warranty does not include on-site assistance with this activity.

Warranty service and support

With the original purchase of an IBM xSeries or IntelliStation system, you have access to extensive support. During the IBM Machine warranty period, you may call IBM or your reseller for problem-determination assistance under the terms of the IBM Statement of Limited Warranty.

The following services are available during the warranty period:

- **Problem determination** - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- **IBM hardware repair** - If the problem is determined to be caused by IBM hardware under warranty, trained service personnel are available to provide the applicable level of service, either on-site or at an IBM service center as determined by IBM.
- **Engineering Change management** - Occasionally, there might be changes that are required after a product has been shipped from IBM. In those instances, IBM will make Engineering Changes (ECs) available that apply to your hardware.
- **Customer replaceable units (CRUs)** - Some parts of IBM xSeries and IntelliStation systems are designated as customer replaceable units. IBM ships CRUs to you for replacement by you. CRUs include keyboards, monitors, memory, diskette drives, hard disk drives, and mice (this list is not inclusive of all CRUs).

The following items are not covered under warranty service:

- Replacement or use of non-IBM parts. All IBM parts contain a 7-character identification in the format IBM FRU XXXXXXXX.
- Identification of software problem sources.
- Installation of customer replaceable units (CRUs).
- Installation and configuration of BIOS code, firmware, or device drivers that are designated as customer installable.

See the IBM Statement of Limited Warranty for a full explanation of IBM warranty terms. Be sure to retain your proof of purchase to obtain warranty service.

Please have the following information ready when you call:

- The machine type and model of your IBM hardware product (if available)
- Serial numbers of your IBM hardware products
- A description of the problem
- The exact wording of any error messages
- Hardware and software configuration information

International Warranty Service

If you travel with your xSeries or IntelliStation system or relocate it to a country or region where your system is sold and serviced by IBM or IBM resellers authorized to perform warranty service, International Warranty Service (IWS) is available during the warranty period. Eligible IBM systems are identified by their four-digit machine types.

You can obtain IWS through the service delivery method (such as depot, carry-in, or on-site) provided in the servicing country or region. Service methods and procedures vary by country or region, and some service or parts might not be available in all countries and regions. Service centers in certain countries or regions might not be able to service all models of a particular machine type. In addition, some countries or regions might have fees and restrictions that apply at the time of service.

To determine whether your system is eligible for IWS, go to <http://www.ibm.com/pc/support/> and click **Warranty lookup**.

Purchasing additional services

During and after the warranty period, you can purchase additional services, such as support for IBM and non-IBM hardware, operating system, and application programs; network setup and configuration; upgraded or extended hardware repair services; and custom installations. Service availability and service name might vary by country or region.

For more information about these services, contact your IBM marketing representative.

IBM Statement of Limited Warranty

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Part 1 - General Terms

This Statement of Limited Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 replace or modify those of Part 1. The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Limited Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications ("Specifications"). The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation unless IBM or your reseller informs you otherwise.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded.

Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment,

improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with “how-to” questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service

To obtain warranty service for a Machine, contact IBM or your reseller. If you do not register your Machine with IBM, you may be required to present proof of purchase.

During the warranty period, IBM or your reseller, if approved by IBM to provide warranty service, provides without charge certain types of repair and exchange service to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. At its discretion, IBM or your reseller will 1) either repair or exchange the failing Machine and 2) provide the service either at your location or a service center. IBM or your reseller will also manage and install selected engineering changes that apply to the Machine.

Some parts of IBM Machines are designated as Customer Replaceable Units (called “CRUs”), e.g., keyboards, memory, or hard disk drives. IBM ships CRUs to you for replacement by you. You must return all defective CRUs to IBM within 30 days of your receipt of the replacement CRU. You are responsible for downloading designated Machine Code and Licensed Internal Code updates from an IBM Internet Web site or from other electronic media, and following the instructions that IBM provides.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided:
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides;
 - b. secure all programs, data, and funds contained in a Machine;
 - c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations; and
 - d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), except for any liability that cannot be waived or limited by applicable laws, IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the charges (if recurring, 12 months' charges apply) for the Machine that is subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES, LOST PROFITS OR LOST SAVINGS, EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Governing Law

Both you and IBM consent to the application of the laws of the country in which you acquired the Machine to govern, interpret, and enforce all of your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

Part 2 - Country-unique Terms

AMERICAS

BRAZIL

Governing Law: *The following is added after the first sentence:* Any litigation arising from this Agreement will be settled exclusively by the court of Rio de Janeiro.

NORTH AMERICA

Warranty Service: *The following is added to this Section:* To obtain warranty service from IBM in Canada or the United States, call 1-800-IBM-SERV (426-7378).

CANADA

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws in the Province of Ontario.

UNITED STATES

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws of the State of New York.

ASIA PACIFIC

AUSTRALIA

The IBM Warranty for Machines: *The following paragraph is added to this Section:* The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other similar legislation and are only limited to the extent permitted by the applicable legislation.

Limitation of Liability: *The following is added to this Section:* Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974 or other similar legislation, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws of the State or Territory.

CAMBODIA, LAOS, AND VIETNAM

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:* laws of the State of New York.

The following is added to this Section: Disputes and differences arising out of or in connection with this Agreement shall be finally settled by arbitration which shall be held in Singapore in accordance with the rules of the International Chamber of Commerce (ICC). The arbitrator or arbitrators designated in conformity with those rules shall have the power to rule on their own competence and on the validity of the Agreement to submit to arbitration. The arbitration award shall be final and binding for the parties without appeal and the arbitral award shall be in writing and set forth the findings of fact and the conclusions of law.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator.

The two arbitrators appointed by the parties shall appoint a third arbitrator before proceeding upon the reference. The third arbitrator shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the ICC. Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.

If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

The English language version of this Agreement prevails over any other language version.

HONG KONG AND MACAU

Governing Law: *The following replaces “laws of the country in which you acquired the Machine” in the first sentence:* laws of Hong Kong Special Administrative Region.

INDIA

Limitation of Liability: *The following replaces items 1 and 2 of this Section:*

1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence;
2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Limited Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

JAPAN

Governing Law: *The following sentence is added to this Section:* Any doubts concerning this Agreement will be initially resolved between us in good faith and in accordance with the principle of mutual trust.

NEW ZEALAND

The IBM Warranty for Machines: *The following paragraph is added to this Section:* The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

Limitation of Liability: *The following is added to this Section:* Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

PEOPLE'S REPUBLIC OF CHINA (PRC)

Governing Law: *The following replaces this Section:* Both you and IBM consent to the application of the laws of the State of New York (except when local law requires otherwise) to govern, interpret, and enforce all your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

Any disputes arising from or in connection with this Agreement will first be resolved by friendly negotiations, failing which either of us has the right to submit the dispute to the China International Economic and Trade Arbitration Commission in Beijing, the PRC, for arbitration in accordance with its arbitration rules in force at the time. The arbitration tribunal will consist of three arbitrators. The language to be used therein will be English and Chinese. An arbitral award will be final and binding on all the parties, and will be enforceable under the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (1958).

The arbitration fee will be borne by the losing party unless otherwise determined by the arbitral award.

During the course of arbitration, this Agreement will continue to be performed except for the part which the parties are disputing and which is undergoing arbitration.

EUROPE, MIDDLE EAST, AFRICA (EMEA)

THE FOLLOWING TERMS APPLY TO ALL EMEA COUNTRIES: The terms of this Statement of Limited Warranty apply to Machines purchased from IBM or an IBM reseller.

Warranty Service:

If you purchase an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM. If you purchase an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchase an IBM Machine in a Middle Eastern or African country, you may obtain warranty service for that Machine from the IBM entity within the country of purchase, if that IBM entity provides warranty service in that country, or from an IBM reseller, approved by IBM to perform warranty service on that Machine in that country. Warranty service in Africa is available within 50 kilometers of an IBM

authorized service provider. You are responsible for transportation costs for Machines located outside 50 kilometers of an IBM authorized service provider.

Governing Law:

The applicable laws that govern, interpret and enforce rights, duties, and obligations of each of us arising from, or relating in any manner to, the subject matter of this Statement, without regard to conflict of laws principles, as well as Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided, except that in 1) Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Hungary, Former Yugoslav Republic of Macedonia, Romania, Slovakia, Slovenia, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan, the laws of Austria apply; 2) Estonia, Latvia, and Lithuania, the laws of Finland apply; 3) Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Djibouti, Democratic Republic of Congo, Equatorial Guinea, France, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Mali, Mauritania, Morocco, Niger, Senegal, Togo, and Tunisia, this Agreement will be construed and the legal relations between the parties will be determined in accordance with the French laws and all disputes arising out of this Agreement or related to its violation or execution, including summary proceedings, will be settled exclusively by the Commercial Court of Paris; 4) Angola, Bahrain, Botswana, Burundi, Egypt, Eritrea, Ethiopia, Ghana, Jordan, Kenya, Kuwait, Liberia, Malawi, Malta, Mozambique, Nigeria, Oman, Pakistan, Qatar, Rwanda, Sao Tome, Saudi Arabia, Sierra Leone, Somalia, Tanzania, Uganda, United Arab Emirates, United Kingdom, West Bank/Gaza, Yemen, Zambia, and Zimbabwe, this Agreement will be governed by English Law and disputes relating to it will be submitted to the exclusive jurisdiction of the English courts; and 5) in Greece, Israel, Italy, Portugal, and Spain any legal claim arising out of this Statement will be brought before, and finally settled by, the competent court of Athens, Tel Aviv, Milan, Lisbon, and Madrid, respectively.

THE FOLLOWING TERMS APPLY TO THE COUNTRY SPECIFIED:

AUSTRIA AND GERMANY

The IBM Warranty for Machines: *The following replaces the first sentence of the first paragraph of this Section:* The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section:

The minimum warranty period for Machines is six months. In case IBM or your reseller is unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

Extent of Warranty: *The second paragraph does not apply.*

Warranty Service: *The following is added to this Section:* During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

Limitation of Liability: *The following paragraph is added to this Section:* The limitations and exclusions specified in the Statement of Limited Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

The following sentence is added to the end of item 2: IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

EGYPT

Limitation of Liability: *The following replaces item 2 in this Section:* as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

Applicability of suppliers and resellers (unchanged).

FRANCE

Limitation of Liability: *The following replaces the second sentence of the first paragraph of this Section:* In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: *(items 1 and 2 unchanged).*

IRELAND

Extent of Warranty: *The following is added to this Section:* Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

Limitation of Liability: *The following replaces items one and two of the first paragraph of this Section:*

1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and
2. the amount of any other actual direct damages, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

ITALY

Limitation of Liability: *The following replaces the second sentence in the first paragraph:* In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than:

1. *(unchanged)*

2. as to any other actual damage arising in all situations involving nonperformance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

The following replaces the third paragraph of this Section: Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: (items 1 and 2 unchanged) 3) indirect damages, even if IBM or your reseller is informed of their possibility.

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND

Limitation of Liability: *The following is added to this Section: IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.*

UNITED KINGDOM

Limitation of Liability: *The following replaces items 1 and 2 of the first paragraph of this Section:*

1. death or personal injury or physical damage to your real property solely caused by IBM's negligence;
2. the amount of any other actual direct damages or loss, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim;

The following item is added to this paragraph: 3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section: IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

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IBM TotalStorage
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