

IBM PC Server

**Advanced Systems Management Adapter
Installation Instructions**

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Important

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

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Safety Information

Before installing this product, read the Safety Information book.

Antes de instalar este produto, leia o Manual de Informações sobre Segurança.

安装本产品前请先阅读《安全信息》手册。

P ed instalací tohoto produktu si p e t te p íru ku bezpe nostních instrukcí.

Læs hæftet med sikkerhedsforskrifter, før du installerer dette produkt.

Lue Safety Information -kirjanen, ennen kuin asennat tämän tuotteen.

Avant de procéder à l'installation de ce produit, lisez le manuel Safety Information.

Vor Beginn der Installation die Broschüre mit Sicherheitshinweisen lesen.

Installálás el tt olvassa el a Biztonsági el írások kézikönyvét !

Prima di installare questo prodotto, leggere l'opuscolo contenente le informazioni sulla sicurezza.

本製品を導入する前に、安全情報資料を御読みください。

이 제품을 설치하기 전에, 안전 정보 책자를 읽어보십시오.

Lees voordat u dit product installeert eerst het boekje met veiligheidsvoorschriften.

Les heftet om sikkerhetsinformasjon (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu należy przeczytać broszurę Informacje Dotyczące Bezpieczeństwa.

Antes de instalar este produto, leia o folheto Informações sobre Segurança.

Перед установкой продукта прочтите брошюру по технике безопасности (Safety Information).

Pred inštaláciou tohto produktu si preítajte Informa n ú brožúrku o bezpe nosti.

Preden namestite ta izdelek, preberite knjižico Varnostne informacije.

Antes de instalar este producto, lea la Información de Seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

在安裝本產品之前，也請先閱讀「安全性資訊」小冊子。

Lithium Battery Notice



Caution:

A lithium battery can cause a fire, an explosion, or a severe burn. Do not recharge, disassemble, heat above 100 degree C (212 degree F), solder directly to the cell, incinerate, or expose the cell contents to water.

Keep away from children.

Replace only with the part number specified for this IBM product. Use of a different battery may present a risk of fire or explosion. The battery connector is polarized; do not attempt to reverse the polarity.

Dispose of the battery according to local regulations.

Cuidado:

Uma bateria de lítio apresenta risco de incêndio, explosão ou queimaduras graves. Não recarregue, desmonte, nem exponha a bateria a temperaturas superiores a 100 graus C (212 F), não a solde diretamente na célula, não a incinere nem exponha o conteúdo da célula à água.

Mantenha fora do alcance de crianças.

Substitua apenas pelo número de peça especificado para este produto IBM. O uso de uma bateria diferente pode apresentar risco de incêndio ou explosão. O conector da bateria é polarizado; não tente inverter a polaridade.

Destrua a bateria de acordo com a regulamentação local.

小心！

锂电池可能引起火警，爆炸或严重的烧伤。不要给它再充电，不要拆卸它，不要将它加热到摄氏 100 度（华氏 212 度）以上，不要直接焊接电芯，焚化它或者将电芯内含物曝露在水中。

不要让小孩接近它。

只可用为此 IBM 产品指定的部件号来代替它，不同电池的使用可能有火警或爆炸的危险。电池连接器是被极化的，不要试图倒置它的极性。

根据当地的规定来处理该电池。

VAROVÁNÍ

Lithiová baterie může způsobit požár, výbuch nebo prudké hoření. Zákaz nabíjení, rozebírání, zahřívání nad 100 °C, pájení přímo na články, spalování nebo vystavení obsahu článku vodě. Chraňte před dětmi.

Zaměňte pouze součástíkou se stejným objednacím číslem IBM.

Použití jiné baterie přináší riziko vzniku požáru nebo výbuchu.

Baterie je pólována; neotočte polaritu.

Baterii zlikvidujte podle místních předpisů.

Pas på!

Litiumbatteriet kan forårsage brand og eksplosion og give alvorlige brandsår. Det må ikke genoplades, åbnes, udsættes for mere end 100 grader, brændes eller komme i berøring med vand.

Batteriet skal opbevares utilgængeligt for børn.

Det må kun udskiftes med et litiumbatteri, der har det partnummer, der er angivet til dette IBM-produkt. Bruges en anden batteritype, kan det medføre eksplosion eller brand. Batteripolen er polariseret. Forsøg ikke at bytte om på polerne.

Batteriet skal kasseres i henhold til de lokale bestemmelser. Spørg kommunens tekniske forvaltning (miljøafdelingen).

Varoitus:

Litiumpariston väärä käsittely voi aiheuttaa tulipalo- tai räjähdysvaaran tai palovammoja. Älä lataa paristoa uudelleen, äläkä pura paristoa osiin. Älä kuumenna paristoa yli 100 °C:n lämpötilaan tai hävitä sitä polttamalla. Estä paristoa joutumasta kosketuksiin veden kanssa.

Pidä paristo poissa lasten ulottuvilta.

Pariston saa vaihtaa vain paristoon, joka on osanumeron perusteella tarkoitettu tähän IBM:n tuotteeseen. Muunlaisen pariston käyttö voi aiheuttaa tulipalo- tai räjähdysvaaran. Älä yritä vaihtaa pariston napaisuutta.

Hävitä paristo ongelmajätteistä säädettyjen lakien ja viranomaisten määräysten mukaisesti.

Attention

Prenez garde aux risques d'incendie, d'explosion ou de brûlures graves liés à l'utilisation d'une pile au lithium. Ne rechargez pas la pile et ne la démontez pas. Ne l'exposez pas à une température supérieure à 100 °C, ne la soudez pas, ne la faites pas brûler et n'en exposez pas le contenu à l'eau.

Gardez la pile hors de portée des enfants.

Si vous la remplacez, commandez une pile de rechange de même référence. Toute autre pile risquerait de prendre feu ou d'exploser. Le connecteur de la pile est polarisé. N'essayez pas d'inverser la polarité.

Ne mettez pas la pile à la poubelle. Pour le recyclage ou la mise au rebut, reportez-vous à la réglementation en vigueur.

Achtung:

Lithiumbatterien sind feuergefährlich, explosiv und können schwere Verbrennungen verursachen. Batterie nicht wiederaufladen, öffnen oder über 100 Grad Celsius erhitzen; die Zelle nicht direkt anlöten, verbrennen oder den Inhalt der Zelle mit Wasser in Berührung bringen.

Batterie nicht in Reichweite von Kindern aufbewahren.

Eine verbrauchte Batterie nur durch eine Batterie mit der für dieses System spezifizierten Teilenummer ersetzen. Andere Batterien können sich entzünden oder explodieren. Der Batterieanschluß hat zwei verschiedene Pole; beim Anschließen die Pole nicht vertauschen.

Batterie gemäß den örtlichen Richtlinien für Sondermüll entsorgen.

Magyarország

VIGYÁZAT!

A lítium elem tüzet, robbanást és komoly égést okozhat. Ne próbálja meg újratölteni, ne szedje szét, ne melegítse 100 °C (212 °F) fölé, ne forrassa közvetlenül az elemet, illetve ne tegye ki víznek az elem tartalmát!

Tartsa távol a gyermekektől!

Csak az erre az IBM termékre meghatározott alkatrész számú elemre cserélje ki!
Eltérő elem használata tűz vagy robbanásveszély kockázatával járhat!

A telepcsatlakozó meghatározott póluskivezetésű, ne kísérelje meg a polaritás felcserélését!

Attenzione:

Una batteria al litio potrebbe incendiarsi, esplodere o procurare gravi ustioni. Non ricaricarla, non smontarla e non riscaldarla ad una temperatura superiore ai 100 gradi, non saldarla, non incinendarla e non gettarla in acqua.

Tenerla lontana dalla portata dei bambini.

Sostituirla soltanto con una batteria contrassegnata dal numero parte specifico per questo prodotto IBM; l'utilizzo di un'altra batteria può determinare rischi di incendio o di esplosione. Il connettore della batteria è polarizzato; non tentare di invertire la polarità.

Smaltire la batteria seguendo la normativa in vigore (DPR915/82 e successive disposizioni e disposizioni locali).

注意：

本製品には、リチウム電池が使用されています。

電池の交換方法や取り扱いを誤ると、発熱、発火、破裂のおそれがあります。電池の交換には、本製品指定の電池を使用してください。

電池は幼児の手の届かない所に置いてください。
万一、幼児が電池を飲み込んだときは、直ちに医師に相談してください。

以下の行為は絶対にしないでください。

- 水にぬらすこと
- 100度C 以上の過熱や焼却
- 分解や充電
- ショート
- 極性を反対に接続すること

電池を廃棄する場合、および保存する場合にはテープなどで絶縁してください。

他の金属や電池と混ざると発火、破裂の原因となります。
電池は地方自治体の条例、または規則に従って廃棄してください。
ごみ廃棄場で処分されるごみの中に捨てないでください。

주의：

리튬 배터리는 화재, 폭발, 심한 화상을 일으킬 수 있습니다. 재충전, 분해, 100 °C 이상의 가열, 직접적인 셀 납땜, 소각, 물에 셀 내용물을 노출시키는 것은 삼가하십시오.

어린이들의 손이 닿지 않는 곳에 보관하십시오.

본 IBM 제품에 지정된 부품 번호로만 대체하십시오. 다른 배터리를 사용하면 화재나 폭발의 위험이 있을 지도 모릅니다. 배터리 커넥터는 분극되어 있습니다. 양극을 반대로 하지 마십시오.

규정에 따라 배터리를 처리하십시오.

Waarschuwing:

De lithiumbatterij is brand- en explosiegevaarlijk en kan ernstige verbrandingen veroorzaken. Laad de batterij niet opnieuw op, demonteer hem niet, stel hem niet bloot aan temperaturen hoger dan 100 graden Celsius (212 graden Fahrenheit), soldeer niet direct op de cel, verbrand hem niet en stel de inhoud van de cel niet bloot aan water.

Buiten bereik van kinderen houden.

Vervang de batterij alleen door een batterij met het onderdeelnummer dat voor dit IBM-product is gespecificeerd. Gebruik van een andere batterij kan brand of explosie van de batterij tot gevolg hebben. De batterij-aansluiting maakt gebruik van polen. Verwissel de polen niet.

Lever de batterij in bij een inzamelpunt voor klein chemisch afval.

Advarsel:

På grunn av brann- og eksplosjonsfare må ikke litiumbatterier lades opp, tas fra hverandre, utsettes for varme over 100 grader C, loddes direkte til cellen, brennes eller utsettes for vann.

Oppbevar batteriet utilgjengelig for barn.

Bruk bare batterier med delenummeret som er oppgitt for produktet. Bruk av feil batteri kan føre til at batteriet antennes eller eksploderer. Batteriet er polarisert. Ikke prøv å forandre denne polariseringen.

Ikke kast batteriet som vanlig avfall. Lever det til forhandleren, på en miljøstasjon eller ved et mottak for spesialavfall.

Niebezpieczeństwo:

Bateria litowa może spowodować pożar, wybuch lub poparzenie. Nie należy jej ładować, rozmontowywać, podgrzewać powyżej 100° C (212° F), lutować bezpośrednio, palić ani wystawiać zawartości na działanie wody.

Należy chronić ją przed dziećmi.

Baterię należy wymieniać tylko na inną baterię oznaczoną tym samym numerem produktu IBM. Użycie innej baterii stwarza ryzyko pożaru lub wybuchu. Złącze baterii ma oznaczone bieguny. Nie należy ich zamieniać.

Baterii należy pozbywać się zgodnie z lokalnymi przepisami.

Cuidado:

Uma bateria de lítio representa um risco de incêndio, explosão ou queimaduras graves. Não a recarregue, não a desmonte nem exponha a temperaturas superiores a 100°C (212°F), não efectue soldaduras directas, não a incinere nem exponha o interior ao contacto com água.

Mantenha-a afastada das crianças.

Quando a substituir, faça-o somente por uma bateria cujo número de referência seja o especificado para este produto IBM. A utilização de uma bateria diferente apresenta o risco de incêndio ou explosão. O terminal da bateria está polarizado. Não tente inverter a polaridade.

Destrua a bateria de acordo com a regulamentação do país.

ОСТОРОЖНО:

Чтобы избежать пожара, взрыва или сильного ожога, литиевую батарею нельзя разряжать, разбирать, нагревать свыше 100°C, сжигать, допускать соприкосновения с водой.

Нельзя ничего припаивать к батарее.

Храните батарею в недоступном для детей месте.

Заменить ее можно только указанным для этого продукта IBM изделием. Использование другой батареи может вызвать пожар или взрыв.

Выводы батареи имеют разную полярность.

Не перепутайте полярность.

Уничтожение батареи необходимо производить согласно регламенту, принятому в вашей стране.

Výstraha

Lítiová batéria môže spôsobiť oheň, exploziu, alebo samovznietenie.

Nedobíjajte, nedemontujte, nevystavujte teplotám nad 100°C (212°F), nespájajte priamo na lánku, nespájajte a nevystavujte obsah lánkov vode.

Držte mimo dosahu detí.

Nahrádzajte jedine dielmi prípustnými pre váš systém. Použitie iných batérií predstavuje riziko požiaru alebo výbuchu. Konektor batérie je polarizovaný; nepokúšajte sa zmeniť polaritu.

Používajte batériu zodpovedajúc miestnym pravidlám.

OPOZORILO

Litijeva baterija lahko povzroči požar, eksplozijo ali opekline.
Baterij se ne sme polniti, razstavljati, segrevati preko 100 stopinj C, ne spajkati direktno na celice, baterij ne smemo zažigati ali izpostavljati njihovo vsebino vodi.

Čuvajte pred otroki.

Uporabljajte samo originalne dele, specifične za ta IBM ov proizvod.

Uporaba drugih baterij lahko povzroči požar ali eksplozijo.

Baterijski konektor je polariziran - polarizacije ne smemo zamenjati.

Z izrabljenimi baterijami ravnamo po predpisih.

Advertencia

Una batería de litio puede causar incendios, explosiones o quemaduras graves. No recargar, desmontar, calentar por encima de los 100 grados C (212 grados F), soldar directamente sobre la pila, incinerar o poner en contacto con el agua el contenido de la misma.

Mantenga fuera del alcance de los niños.

Sustituir por el número de pieza especificado para este producto de IBM. Usar una pila diferente puede suponer un riesgo de incendio o explosión. El conector de la batería está polarizado. No intente invertir la polaridad.

Deshágase de la batería de acuerdo con las disposiciones municipales.

VARNING

Ett litiumbatteri kan orsaka brand, explosion eller allvarlig brännskada. Det får inte återladdas, tas isär, utsättas för temperaturer över 100°C eller brännas. Löd inte direkt på battericellen och låt inte cellinnehållet komma i kontakt med vatten.

Förvara batteriet oåtkomligt för barn.

Byt endast till batteri med angivet artikelnummer för den här IBM-produkten. Användning av annat batteri kan medföra brand- eller explosionsrisk. Batterianslutningen är polariserad. Försök inte växla polaritet.

Följ lokala föreskrifter vid kassering av batteriet.

注意：

鋰電池可能會引起火災、爆炸或造成嚴重的燃燒。切勿對鋰電池進行以下動作：再充電、拆卸、置於攝氏 100 度 (華氏 212 度) 高溫以上、直接對電池元件進行焊接、焚毀或使電池內的元件沾到水。

請置於孩童無法取得之處。

只可更換 IBM 產品所指定的電池，使用不同廠牌的電池可能有造成火災或爆炸的危險；電池接頭有正負極之分，切勿任意變換使用。

請依照本地的垃圾處置條規來處理鋰電池。

Introduction

The IBM PC Server Advanced Systems Management Adapter (ASMA) (hereafter called adapter) provides monitoring and event-recording functions for ISA and EISA systems when used with Netfinity Version 5.0.X or later.

The IBM PC Server Advanced Systems Management Adapter can be installed in ISA or EISA systems only.

The adapter is supported by the following diskettes that come with this adapter option.

- *IBM Advanced System Management for Windows 95 or Windows NT Installation* diskette
- *IBM Advanced System Management for OS/2 or NetWare Installation* diskette

Refer to the *IBM Advanced System Management for Netfinity User's Guide* that comes with this adapter option for the operating instructions.

Device drivers for OS/2, Microsoft Windows NT, and Novell NetWare are also provided with the adapter.

You can access the latest information about product updates on the IBM PC Server World Wide Web page at <http://www.us.pc.ibm.com/servers/>

Installation Requirements

To install the IBM PC Server Advanced Systems Management Adapter, you must have:

- An ISA or EISA system
- IBM PC Server Advanced Systems Management Adapter Option, which consists of:
 - Adapter
 - 34-pin cable (for use with PC Server 325 and PC Server 330 only)
 - 16-pin cable (for use with PC Server 325 and PC Server 330 only)
 - *IBM Advanced Systems Management Adapter Configuration/Update Utility & Device Drivers* diskette
 - *IBM Advanced System Management for Windows 95 or Windows NT Installation* diskette
 - *IBM Advanced System Management for OS/2 or NetWare Installation* diskette
 - *IBM Advanced System Management for Netfinity User's Guide*
 - *IBM PC Server Advanced Systems Management Adapter Installation Instructions* (this book)
- Tools to remove your system covers
- Tools to remove expansion slot covers
- The documentation that comes with your system
- PC Server 704 adapter installation also requires:
 - A separately purchased 34-pin-to-26-pin adapter-to-system board PC Server Systems Management Cable
 - A separately purchased PC Server Advanced Systems Management Power Unit
- Other systems might require a separately purchased PC Server Advanced Systems Management Power Unit

This book is intended for a network administrator—that is, the individual responsible for configuring, maintaining, managing, and troubleshooting a PC Server.

Note: The illustrations in this publication might be slightly different from your hardware.

Handling Static-Sensitive Devices

The IBM PC Server Advanced Systems Management Adapter is a sensitive electronic device and should be handled with care.

Attention

Static electricity can damage your equipment. Do not take the option out of its static-protective package until the instructions tell you to do so.

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

- Limit your movement. Movement can cause static electricity to build up around you.
- Always handle options carefully. Handle adapters by the edges.
- Never touch any exposed circuitry.
- Prevent others from touching the option.
- Before opening the static-protective package containing the option, touch the package to any unpainted metal surface on the system, such as the metal expansion-slot covers, for at least 2 seconds. (The location of the metal expansion-slot covers is shown in the documentation that comes with your system.) Touching an unpainted metal surface reduces the static electricity in the package and in your body.
- When possible, remove the option from the package and install it directly into the system without putting the option down. If you must put the option down, place the static-protective package the option came in on a smooth, level surface and place the option, component side up, on the package. If a static-protective package is not available, use a piece of paper.
- Do not place the option on the system cover or other metal surface.

PC Server 325 and 330 BIOS Update for Adapter Support

If you are installing the IBM PC Server Advanced Systems Management Adapter in an IBM PC Server 325 or 330, your system BIOS must be at the level listed below, or a later level.

- PC Server 325 Model 8639-EJ0, ES0, ESV, RS0, EM0
BIOS level 40A
- PC Server 325 Model 8639-PB0, PTW, PT0, RB0
BIOS level 12A
- PC Server 330 Model 8640-ES0, ES2, ESS, EM2, EMR
BIOS level 40A
- PC Server 330 Model 8640-PB0, PM0, PT0
BIOS level 12A

To check your system BIOS level:

1. Shut down your system and restart it.
2. When the IBM logo screen appears, check the BUILD ID in the lower left corner of the screen.

An example of a BUILD ID is RAET40AUS. The 40A is the BIOS level.

If your system BIOS level is not 40A or later, you must download the latest level and update your system BIOS.

3. Download the latest system BIOS from either of the following:
 - IBM PC Server World Wide Web page at <http://www.us.pc.ibm.com/servers/>
 - IBM PC Company Bulletin Board Service (BBS) at (919) 517-0001
4. Copy the system BIOS update to a diskette.
5. Shut down your server.
6. Restart the system with the system BIOS update diskette in the diskette drive.
7. Follow the on-screen prompts to update the system BIOS.

Resetting the Adapter and Clearing the Configuration

If you removed an adapter from one system and are reinstalling the adapter in a different system, you *must* reset the adapter (clear the configuration) before you reinstall the adapter to avoid possible configuration conflicts. With the adapter removed from the system:

1. Remove the battery from the adapter and set it aside.
 - a. Push the battery from the edge towards the center.
 - b. Lift the battery out of the battery socket.
2. Carefully short the battery contacts together with a small paper clip or a small metal screwdriver for *5–10 seconds*. This resets the adapter and clears the configuration.
3. Reinstall the battery on the adapter.
 - a. Tilt the battery into the battery socket and press in and down on the battery.
 - b. Be sure the battery is secure in the battery socket.
4. Dispose of defective batteries as required by local ordinances or regulations.

After you reset the adapter and clear the configuration, or replace the battery, you *must* reconfigure the adapter. Refer to “Adapter Configuration” on page 20.

Adapter Installation

The adapter installation procedures are described in the following sections.

If you are installing the adapter in a PC Server 325, go to “PC Server 325 Adapter Installation” on page 8.

If you are installing the adapter in a PC Server 330, go to “PC Server 330 Adapter Installation” on page 11.

If you are installing the adapter in a PC Server 704, go to “PC Server 704 Adapter Installation” on page 14.

If you are installing the adapter in any other system, go to “Other ISA or EISA Systems Adapter Installation” on page 18.

PC Server 325 Adapter Installation

Before you begin, be sure you have:

Read “Safety Information” on page v and “Handling Static-Sensitive Devices” on page 4.

Refer to Figure 1 or Figure 2 on page 9, and Figure 3 on page 10 and complete the following steps.

1. Ensure that the system power is off and the power cord is unplugged from the electrical outlet.
2. Disconnect all cables and cords from the system.
3. Remove the server cover.
4. Remove an expansion slot cover from an EISA/ISA slot.
 - ISA slot 2 or 3 on Models 8639-EJ0, ES0, ESV, RS0, EM0
 - Either ISA slot on Models 8639-PB0, PTW, PT0, RB0, 1RY

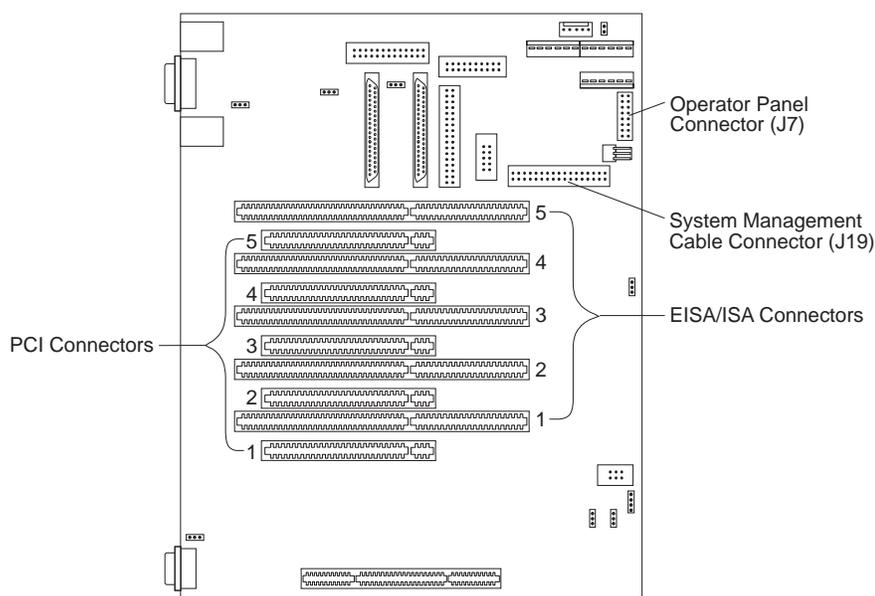


Figure 1. PC Server 325 Models 8639-EJ0, ES0, ESV, RS0, EM0 System Board

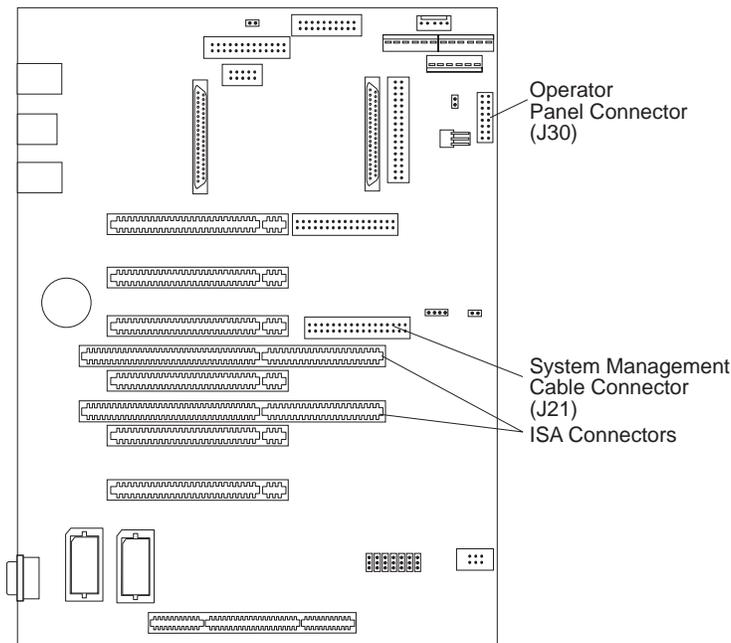


Figure 2. PC Server 325 Models 8639-PB0, PTW, PT0, RB0 System Board

5. Disconnect the cable from the operator panel connector on the system board.

- Connector J7 on Models 8639-EJ0, ES0, ESV, RS0, EM0
- Connector J30 on Models 8639-PB0, PTW, PT0, RB0

Note: It is easier to connect the cables to the system board and adapter before you install the adapter in the server.

6. Connect one end of the 34-pin cable that comes with the adapter to the system-management cable connector on the system board.

- Connector J19 on Models 8639-EJ0, ES0, ESV, RS0, EM0
- Connector J21 on Models 8639-PB0, PTW, PT0, RB0

7. Connect one end of the 16-pin cable that comes with the adapter to the operator-panel cable connector on the system board.

- Connector J7 on Models 8639-EJ0, ES0, ESV, RS0, EM0
- Connector J30 on Models 8639-PB0, PTW, PT0, RB0

8. Connect the other end of the 34-pin cable that comes with the adapter to adapter connector J16.

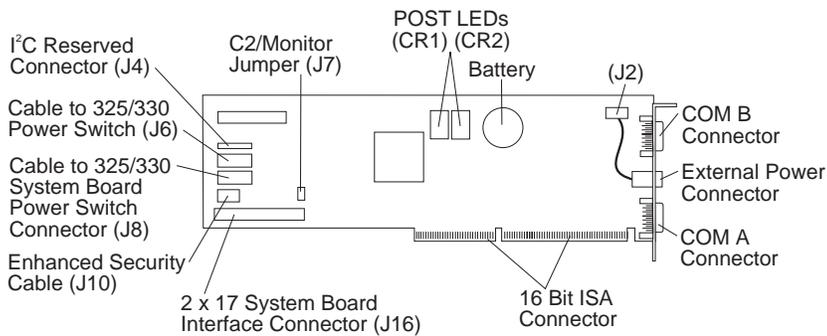


Figure 3. Adapter Component Locations

9. Connect the other end of the 16-pin cable that comes with the adapter to adapter connector J8.
10. Connect the cable disconnected from the system board in step 5 on page 9 to adapter connector J6.
11. Install the adapter in the system board EISA/ISA connector. Refer to your system documentation for adapter installation instructions.
12. Reconnect all cables and cords to the system.

Do not put the server cover on now.

Go to “Adapter Configuration” on page 20 for adapter configuration procedures.

PC Server 330 Adapter Installation

Before you begin, be sure you have:

Read “Safety Information” on page v and “Handling Static-Sensitive Devices” on page 4.

Refer to Figure 4 or Figure 5 on page 12, and Figure 6 on page 13 and complete the following steps.

1. Ensure that the system power is off and the power cord is unplugged from the electrical outlet.
2. Disconnect all cables and cords from the system.
3. Remove the server cover.
4. Remove an expansion slot cover from an EISA/ISA slot.
 - Slot 2, 3, or 4 on Models 8640-ES0, ES2, ESS, EM2, EMR
 - Either ISA slot on Models 8640-PB0, PM0, PT0, 11Y

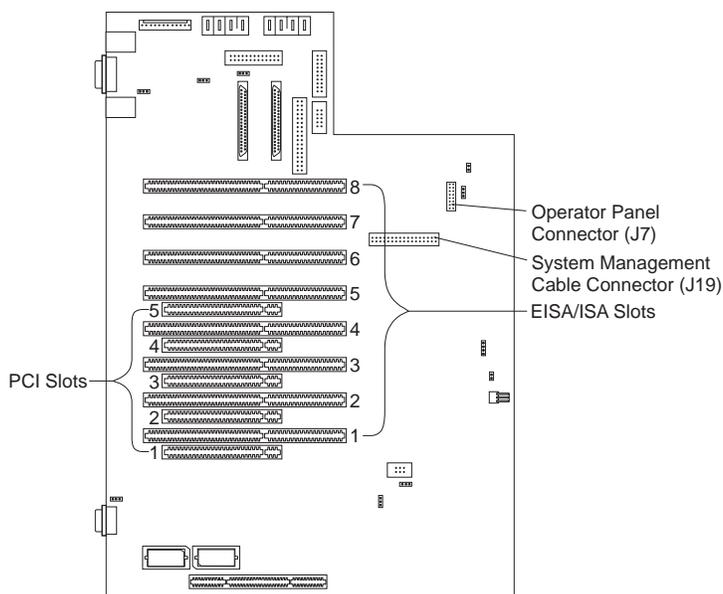


Figure 4. PC Server 330 Models 8640-ES0, ES2, ESS, EM2, EMR System Board

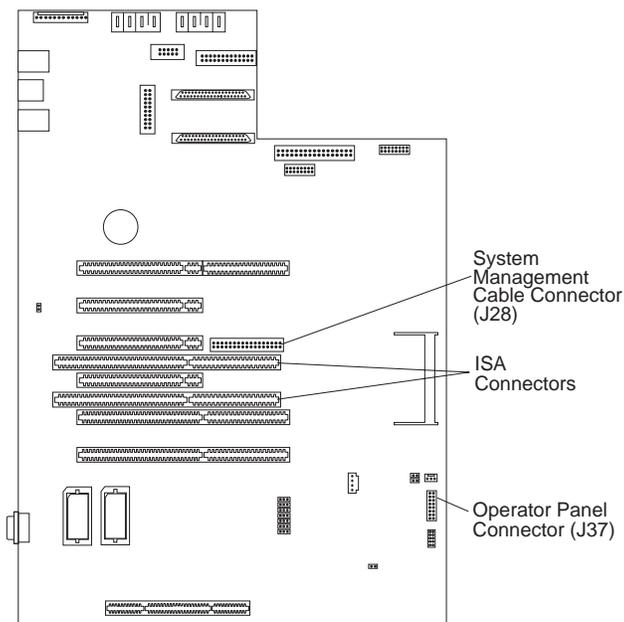


Figure 5. PC Server 330 Models 8640-PB0, PM0, PT0 System Board

5. Disconnect the cable from the operator panel connector on the system board.

- Connector J7 on Models 8640-ES0, ES2, ESS, EM2, EMR
- Connector J37 on Models 8640-PB0, PM0, PT0

Note: It is easier to connect the cables to the system board and adapter before you install the adapter in the server.

6. Connect one end of the 34-pin cable that comes with the adapter to the system-management cable connector on the system board.

- Connector J19 on Models 8640-ES0, ES2, ESS, EM2, EMR
- Connector J28 on Models 8640-PB0, PM0, PT0

7. Connect one end of the 16-pin cable that comes with the adapter to the operator-panel cable connector on the system board.

- Connector J7 on Models 8640-ES0, ES2, ESS, EM2, EMR
- Connector J37 on Models 8640-PB0, PM0, PT0

- Connect the other end of the 34-pin cable that comes with the adapter to adapter connector J16.

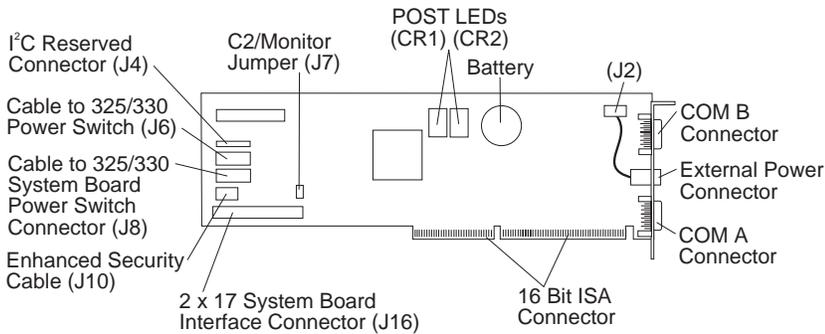


Figure 6. Adapter Component Locations

- Connect the other end of the 16-pin cable that comes with the adapter to adapter connector J8.
- Connect the cable disconnected from the system board in step 5 on page 12 to adapter connector J6.
- Install the adapter in the system board EISA/ISA connector. Refer to your system documentation for adapter installation instructions.
- Reconnect all cables and cords to the system.

Do not put the server cover on now.

Go to “Adapter Configuration” on page 20 for adapter configuration procedures.

PC Server 704 Adapter Installation

Before you begin, be sure you have:

Read "Safety Information" on page v and "Handling Static-Sensitive Devices" on page 4.

Notes:

1. The PC Server 704 adapter installation requires:
 - a. A PC Server Systems Management Cable (34-pin-to-26-pin adapter-to-system board cable), available for purchase separately
 - b. A PC Server Advanced Systems Management Power Unit, available for purchase separately
2. It is easier to connect the cable to the system board and adapter before you install the adapter in the server.
3. The two cables that come with the adapter are not used with the PC Server 704 adapter installation.

Refer to Figure 7 on page 15 and Figure 8 on page 16 and complete the following steps.

1. Ensure that the system power is off and that all system power cords are unplugged from electrical outlets.
2. Disconnect all cables and cords from the system.
3. Remove the server cover.
4. Remove the expansion slot cover from any available EISA/ISA slot.

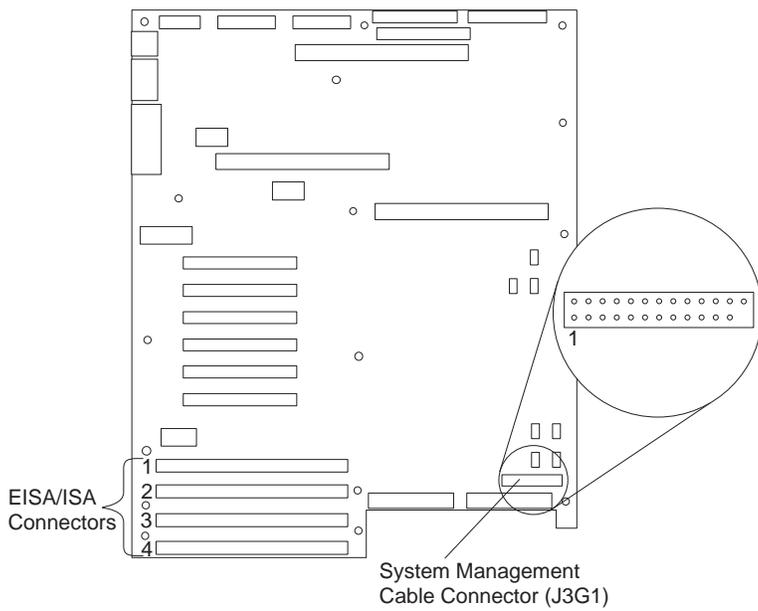


Figure 7. PC Server 704 System Board

5. Connect the 26-pin end of the systems-management cable to the system-management cable connector J3G1 on the system board. (Make sure you correctly align the cable with connector J3G1 on the system board.)

- Connect the 34-pin end of the systems-management cable to adapter connector J16.

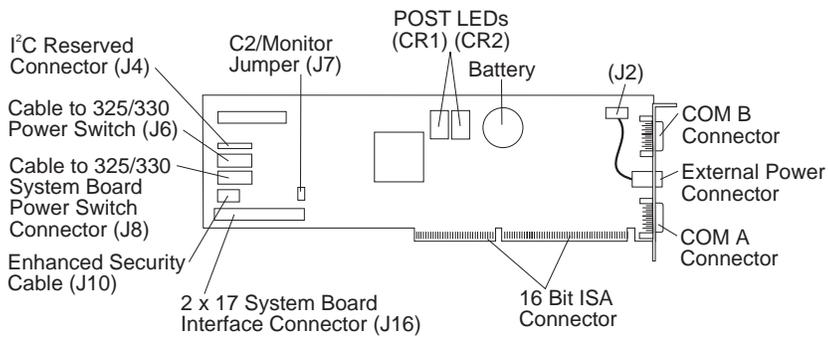


Figure 8. Adapter Component Locations

- Install the adapter in the system board EISA/ISA connector. Refer to your system documentation for adapter installation instructions.

Refer to Figure 9 and complete the following steps.

8. Connect the power-unit control cable **1** to the connector on the adapter.
9. Connect the power-unit power cord **2** to the bottom power connector on the PC Server 704.
10. Connect one of the system power cords **3** (that normally connects from the system to an electrical outlet) to the connector on the power unit (instead of to the computer), and then connect the other end of the power cord to an electrical outlet.
11. Press the power-unit power-on button. Refer to “Power Unit Operation” on page 29 for the power-on button location.
12. Connect all remaining system power cords **4**.

Do not put the server cover on now.

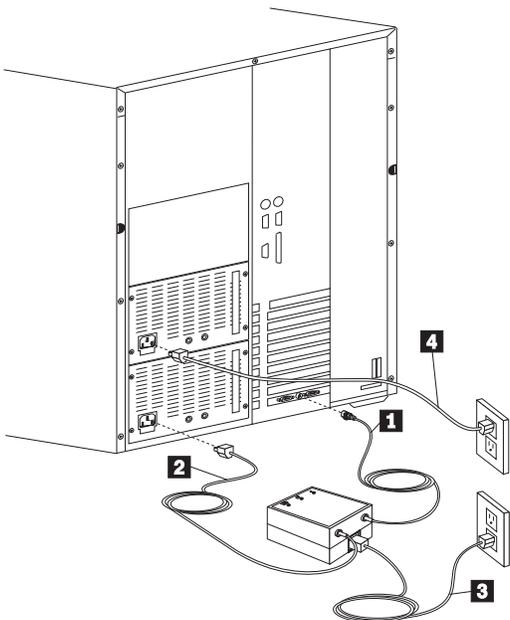


Figure 9. PC Server 704 Power Unit Cables

Go to “Adapter Configuration” on page 20 for adapter configuration procedures.

Other ISA or EISA Systems Adapter Installation

Before you begin, be sure you have:

Read "Safety Information" on page v and "Handling Static-Sensitive Devices" on page 4.

Refer to Figure 10 and complete the following steps.

1. Ensure that the system power is off and the power cord is unplugged from the electrical outlet.
2. Disconnect all cables and cords from the system.
3. Remove the system cover.

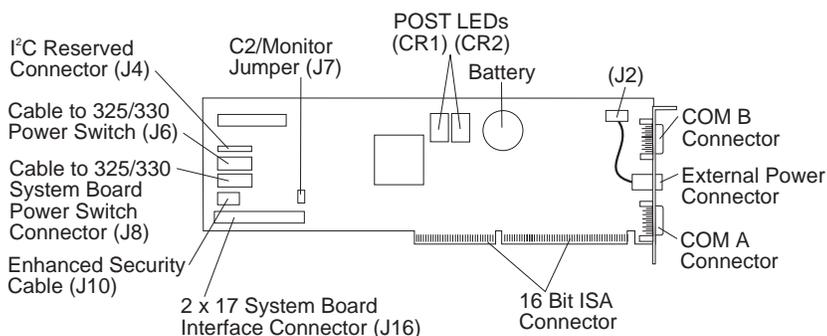


Figure 10. Adapter Component Locations

Note: The two cables that come with the adapter are not used with these systems.

4. Install the adapter. Refer to your system documentation for adapter installation instructions.

If you are using a PC Server Advanced Systems Management Power Unit, go to step 6 on page 19 to connect the power unit.

If you are not using an external power unit, go to "Adapter Configuration" on page 20 for adapter configuration procedures.

5. Refer to Figure 11 on page 19 and complete the following steps.

Note: Your system might look different than the one illustrated.

6. Connect the power-unit control cable **1** to the connector on the adapter.
7. Connect the power-unit power cord **2** to the power connector on the system.
8. Connect the system power cord **3** (that normally connects from the system to an electrical outlet) to the connector on the power unit (instead of to the computer), and then connect the other end of the power cord to an electrical outlet.
9. Press the power-unit power-on button. Refer to “Power Unit Operation” on page 29 for the power-on button location.

Do not put the system cover on now.

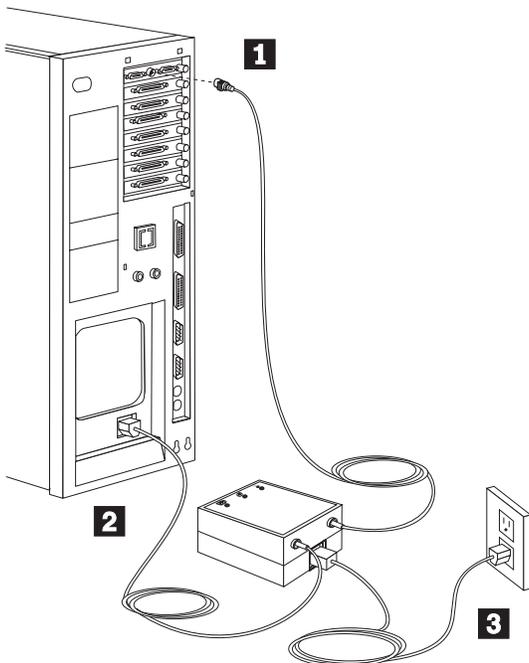


Figure 11. Power Unit Cables

Go to “Adapter Configuration” on page 20 for adapter configuration procedures.

Adapter Configuration

Once you have installed the IBM PC Server Advanced Systems Management Adapter you must configure it. To configure the adapter, use both the configuration program that comes with the adapter.

Note: Do not configure your adapter to share a COM port with the system.

To configure only the adapter service processor:

The basic adapter service processor configuration enables full adapter service processor function.

- The basic adapter configuration enables the adapter service processor.
- The adapter COM port configuration is not changed.
 - Both adapter COM ports are disabled for system access.
 - Adapter COM B is dedicated to the adapter with full remote connection capabilities.
- Your system COM port configuration is not changed.

To configure the adapter service processor only, do the following.

1. Check the LED indicators (next to the battery).

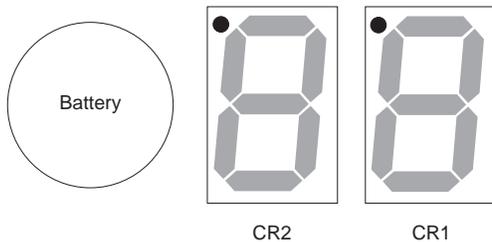


Figure 12. Adapter LEDs

CR1 Dot On	CR1 Dot Off
Problem indication. Go to “Help and Service Information” on page 31.	Normal. Check CR2 Dot.
CR2 Dot Blinking	CR2 Dot Off
Normal; microcode is loaded. Go to step 2.	Microcode is not loaded. Select Update Service Processor on the Flash Utility menu (see steps 1 through 3 in “Adapter Configuration Flash Utility Program” on page 23 for instructions on how to access the Flash Utility menu). Follow the prompts; then return here.

Figure 13. Adapter LED Indicators

2. Run your system configuration program to reserve resources.

- EISA Configuration Utility program for EISA systems
- System Configuration/Setup Utility ISA Legacy Resources for ISA systems

(Resource example: I/O address range 200–207, interrupt 5)

The adapter service processor can be configured to the following I/O address ranges and interrupts.

I/O Address Ranges (hex)	Interrupts
100–107	3
120–127	4
140–147	5
168–16F	9
188–18F	10
200–207	11
220–227	14
240–247	15
268–26F	
300–307	

Note: Any listed I/O address range can be assigned with any listed interrupt as long as there are no conflicts with previously assigned system I/O addresses and interrupts.

Figure 14. Adapter I/O address ranges and interrupts

3. Write the reserved resources in the worksheet below.

Configuration Data Worksheet		
	I/O Address	Interrupt
Service Processor Port		

- Run the adapter Flash Utility program (see steps 1 through 4 in “Adapter Configuration Flash Utility Program” on page 23) and configure the service processor to the I/O address (for example, 200) and interrupt (for example, 5) you recorded in the configuration data worksheet.
- Go to “Device Driver Installation” on page 25 to install the operating system device drivers.

Adapter Configuration Flash Utility Program

Important

If you are using an external Power Controller or “power brick,” you must connect the Power Controller **and** reset the Power Controller before attempting to use the flash utility program to flash your adapter microcode. For more information on the external Power Controller, see “Power Unit Operation” on page 29.

Follow these instructions to configure your adapter.

1. Shut down your operating system.
2. Make sure the *IBM Advanced Systems Management Adapter Configuration/Update Utility & Device Driver* diskette is not write protected, and insert it into your diskette drive.
3. Press **Ctrl+Alt+Del** to restart your system. The adapter configuration Flash Utility menu is displayed.

```
Flash Utility

Select one:

Configure Service Processor
View Service Processor Configuration
Update Service Processor
Set Up COM Ports
Configure OS Watchdog Timer
Exit

Enter  F1=Help  F3=Exit
```

Figure 15. Adapter Configuration Flash Utility Menu

4. Follow the on-screen prompts and choose **Set Up COM Ports** from the Flash Utility menu. Select the COM port I/O addresses and interrupts you entered on the configuration data worksheet.

5. Choose **Update Service Processor**. Follow the on-screen prompts to complete the update and return to the Main Menu.
6. Choose **Set Up COM Ports**, and then disable COM Ports A and B.
7. Follow the on-screen prompts to exit
8. Restart your server.
9. Install the adapter device drivers.
See “Device Driver Installation” on page 25 for device driver installation instructions.
10. Visually confirm your installation and configuration.
Look at your adapter. If the light on the LED panel is not blinking, your card is not properly installed. Repeat the steps in this procedure to ensure correct function of your adapter.
11. Replace the system cover.

Device Driver Installation

If your operating system is OS/2, go to “OS/2 Device Driver Installation” on page 26.

If your operating system is Windows NT, go to “Windows NT Device Driver Installation” on page 27.

If your operating system is Novell NetWare, go to “Novell NetWare Device Driver Installation” on page 28.

OS/2 Device Driver Installation

The OS/2 adapter device driver is stored in the C:\OS2 and C:\OS2\DLL directories unless otherwise specified by you. The CONFIG.SYS file is also updated.

To install the adapter device driver and dynamic link library (DLL):

1. Insert the *IBM Advanced Systems Management Adapter Configuration/Update Utility & Device Driver* diskette into your diskette drive.
2. Open an OS/2 window.
3. At the OS/2 prompt type:
A:
and press **Enter**.
4. At the A: prompt type:
OS2\SETUP
and press **Enter**.
5. Follow the menu prompts to complete the installation.
6. Shut down and restart the system to activate the device driver.

Refer to the *IBM Advanced System Management for Netfinity Manager User's Guide* for Netfinity-support installation instructions.

Windows NT Device Driver Installation

The Windows NT adapter device drivers are stored in the Windows NT system directories.

To install the adapter device drivers:

1. Insert the *IBM Advanced Systems Management Adapter Configuration/Update Utility & Device Driver* diskette into your diskette drive.
2. Log on with administrator privileges.
3. Open a DOS window.
4. At the DOS prompt type:
A:
and press **Enter**.
5. Type CD\NT and press **Enter**.
6. Type SETUP and press **Enter**.

The adapter device drivers are loaded and started.

Refer to the *IBM Advanced System Management for Netfinity Manager User's Guide* for Netfinity-support installation instructions.

Novell NetWare Device Driver Installation

To install the Novell Netware adapter device driver:

1. Insert the *IBM Advanced Systems Management Adapter Configuration/Update Utility & Device Driver* diskette into your diskette drive.
2. At the NetWare prompt type:

```
LOAD A:\NETWARE\SETUP
```

and press **Enter**.
3. Follow the on-screen prompts. If you accept the default choices, the adapter device driver is copied to the hard disk as `SYS:\SYSTEM\IBMSPN.NLM`, and the `AUTOEXEC.NCF` file is updated.
4. To load the adapter device driver:
 - a. Restart the system.
Or
 - b. At the NetWare prompt type:

```
SEARCH ADD path
```

(where *path* is the path the driver was copied to in step 3)
and press **Enter**.
Then, at the NetWare prompt type:

```
LOAD IBMSPN port-adrs irq
```

(where *port-adrs* is the port address you selected and *irq* is the interrupt you selected during the adapter configuration procedure)
and press **Enter**.
The adapter device driver will load without restarting the server.

Refer to the *IBM Advanced System Management for Netfinity Manager User's Guide* for Netfinity-support installation instructions.

Power Unit Operation

The power unit provides power to your system under control of the adapter or Netfinity. The system power can be disabled in response to certain alerts. The system power can be turned on and off from a remote Netfinity host.

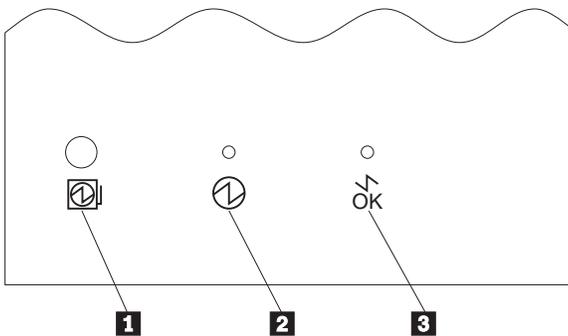


Figure 16. Power Unit Power Switch and Indicators

Refer to Figure 16.

- If system power from the power unit is disabled by the adapter, press the power-unit power-on button **1** to enable system power from the power unit.
- If the power-status LED **2** is On, power is enabled to the system. If the power-status LED is Off, power is disabled to the system.
- If the cable-attached LED **3** is On, the power-unit control cable is connected to the adapter. If the cable-attached LED is Off, the power-unit control cable is not connected to the adapter.

Figure 17 on page 30 describes the power unit indicators and the actions to be taken. Also refer to Figure 16.

Power-Status LED 2	Cable-Attached LED 3	Description	Action
On		System power is enabled.	None
Off		The adapter has caused system power to be removed.	Press the power-unit power-on button 1 to restore system power.
	On	Power-unit signal cable is connected to adapter.	None
	Off	Power-unit signal cable is not connected to adapter.	Connect the cable to the adapter.

Figure 17. Power Unit Indicators and Actions

Help and Service Information

During the warranty period, you can get toll-free technical support 24 hours a day, 7 days a week, to answer any questions about your adapter.* If you need warranty service, return or exchange is available. In addition, if your IBM options are installed in an IBM computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Before calling, please prepare for your call by following these steps.

Important:: To avoid electrical shock, unplug your computer and all attached devices from electrical outlets before performing any troubleshooting procedure.

Step 1: Troubleshooting

You might be able to solve the problem yourself. Before calling IBM, you might want to try the following troubleshooting procedures.

1. Remove and reattach all adapter cables.
2. Remove the adapter.
3. Inspect the adapter for damage.
4. Reinstall the adapter. Place the adapter in a different slot, if possible.
5. Check the adapter and system COM port configuration.
6. After completing these steps, reassemble the system, connect the power cord, and retry the failing operation.
7. Check the system documentation for instructions about the installation of options. Look for a section about system setup or system configuration. Follow all procedures.

* Response time will vary depending on the number and nature of calls received.

Step 2: Preparing for the Call

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

1. Option name, description, and serial number (if any)
2. Proof of purchase
3. Computer manufacturer, model, serial number, and manual
4. Exact wording of the error message (if any)
5. Description of the problem
6. Hardware and software configuration information for your system

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

Step 3: Placing the Call to IBM

Use one of the following numbers:

- In the United States and Puerto Rico, call 1-800-772-2227.
- In Canada, call 1-800-565-3344.

In all other countries, contact your IBM reseller or IBM marketing representative.

Product Warranties and Notices

Warranty Statements

The warranty statements consist of two parts: Part 1 and Part 2. Part 1 varies by country. Part 2 is the same for both statements. Be sure to read both the Part 1 that applies to your country and Part 2.

- **United States, Puerto Rico, and Canada (Z125-4753-05 11/97)**
(Part 1 - General Terms on page 33)
- **Worldwide except Canada, Puerto Rico, Turkey, and United States (Z125-5697-01 11/97)**
(Part 1 - General Terms on page 36)
- **Worldwide Country-Unique Terms**
(Part 2 - Country-Unique Terms on page 40)

IBM Statement of Limited Warranty for United States, Puerto Rico, and Canada (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 may 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 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.

Machine - IBM PC Server Advanced Systems Management Adapter

Warranty Period* - Three Year

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

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. 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.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

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. The replacement may not be new, but will be in good working order.

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.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

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 the Machine, contact your reseller or IBM. In the United States, call IBM at 1-800-772-2227. In Canada, call IBM at 1-800-565-3344. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, 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. IBM may repair the failing Machine or exchange it at its discretion.

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.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. 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.

Production Status

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

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), 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 greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

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 (INCLUDING LOST PROFITS OR 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.

IBM Statement of Warranty Worldwide except Canada, Puerto Rico, Turkey, United States (Part 1 - General Terms)

This Statement of Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 may replace or modify those of Part 1. The warranties provided by IBM in this Statement of 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

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.

Machine - IBM PC Server Advanced Systems Management Adapter

Warranty Period* - Three Year

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

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. 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.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

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. The replacement may not be new, but will be in good working order.

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.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

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 the Machine, contact your reseller or IBM. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service centre, 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. IBM may repair the failing Machine or exchange it at its discretion.

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.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. 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 authorisation 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 fulfil 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.

Production Status

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

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), 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 greater of U.S. \$100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

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 (INCLUDING LOST PROFITS OR 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.

Part 2 - Worldwide Country-Unique Terms

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 legislation and are only limited to the extent permitted by the applicable legislation.

Extent of Warranty: The following replaces the first and second sentences of this Section:

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

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, 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.

PEOPLE'S REPUBLIC OF CHINA: Governing Law: The following is added to this Statement:

The laws of the State of New York govern this Statement.

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 Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

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.

EUROPE, MIDDLE EAST, AFRICA (EMEA)

The following terms apply to all EMEA countries.

The terms of this Statement of Warranty apply to Machines purchased from an IBM reseller. If you purchased this Machine from IBM, the terms and conditions of the applicable IBM agreement prevail over this warranty statement.

Warranty Service

If you purchased 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 purchased 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.

The applicable laws, Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided. However, the laws of Austria govern this Statement if the warranty service is provided in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Federal Republic of Yugoslavia, Georgia, Hungary, Kazakhstan, Kirghizia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, and Ukraine.

The following terms apply to the country specified:

EGYPT: Limitation of Liability: The following replaces item 2 in this Section:
2. 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.

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).

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 are 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.

Production Status: The following paragraph replaces this Section:
Each Machine is newly manufactured. It may incorporate in addition to new parts, re-used parts as well.

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

In item 2, replace "U.S. \$100,000" with "1.000.000 DEM."

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

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 the greater of Irish Pounds 75,000 or 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: (item 1 unchanged) 2) as to any other actual damage arising in all situations involving non-performance 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 second 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.

TURKIYE: Production Status: The following replaces this Section:

IBM fulfils customer orders for IBM Machines as newly manufactured in accordance with IBM's production standards.

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 the greater of Pounds Sterling 150,000 or 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 will be limited to damages.

NORTH AMERICA

CANADA: Warranty Service: The following is added to this Section:

To obtain warranty service from IBM, call **1-800-465-6666**.

UNITED STATES OF AMERICA: Warranty Service: The following is added to this Section:

To obtain warranty service from IBM, call **1-800-IBM-SERV**.

Notices

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Subject to IBM's valid intellectual property or other legally protectable rights, any functionally equivalent product, program, or service may be used instead of the IBM product, program, or service. The evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, are the responsibility of the user.

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Novell Novell, Inc.

Microsoft, Windows, and Windows NT are trademarks or registered trademarks of Microsoft Corporation.

Other company, product, and service names may be trademarks or service marks of others.

Electronic Emission Notices

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

IBM is not responsible for any radio or television interference caused by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Class A Emission Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

European Community Directive Conformance Statement

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a nonrecommended modification of the product, including the fitting of non-IBM option cards.

Australia and New Zealand Class A Statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Japanese Voluntary Control Council for Interference (VCCI) Statement

注意：

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づく第一種情報技術装置です。この装置を家庭環境で使用すると電波妨害をひき起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。



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