



# Família de Placas do Servidor IBM 10/100 Ethernet

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*Guia do Usuário*

**Nota:** Antes de utilizar essas informações e o produto que elas suportam, leia as informações no Appendix D “Product warranties and notices” na página D-1.

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## **Segurança**

Antes de instalar este produto, leia as informações sobre segurança.



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## Prefácio

Este manual contém as informações necessárias para instalar e utilizar a placa. O manual está dividido em duas partes:

### Guia de Instalação e do Usuário

Este guia contém instruções para instalação resumidas.

Este guia está disponível nos seguintes idiomas:

- Inglês
- Francês
- Alemão
- Espanhol
- Italiano
- Português do Brasil
- Chinês Tradicional
- Japonês

### Apêndices

Os apêndices contêm especificações do produto, informações de ajuda e serviço, garantias do produto e avisos.

**Nota:** As ilustrações neste manual podem ser um pouco diferentes de seu hardware.

Para obter informações detalhadas sobre o hardware da placa, os procedimentos de instalação do driver e os recursos avançados, vá ao diretório \info do CD-ROM e exiba os arquivos de ajuda apropriados. Para a instalação do driver, exiba o arquivo drivers.htm.

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## Registrando seu Opcional

Obrigado por adquirir os OPCIONAIS da IBM. Reserve alguns minutos para registrar o produto e nos fornecer informações que nos ajudarão a melhor servi-lo no futuro. Seu retorno é importante para desenvolvermos produtos e serviços úteis a você, bem como para desenvolvermos melhores maneiras de nos comunicarmos com você. Registre o opcional no site da IBM na Web em

<http://www.ibm.com/pc/register>

A IBM enviará a você informações e atualizações sobre o produto registrado, a menos que você indique no questionário do site da Web que não deseja receber informações adicionais.



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## Guia de Instalação e do Usuário

Este manual contém as informações necessárias para instalação e utilização da Placa do Servidor IBM® 10/100 Ethernet e da Placa do Servidor de Porta Dupla 10/100.

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### Requisitos do Sistema

Antes de instalar a placa, verifique no computador os seguintes requisitos de configuração:

- Uma abertura de slot PCI de 32 bits.
- Uma abertura de slot PCI de 32 bits ou 64 bits para a Placa do Servidor de Porta Dupla 10/100
- O BIOS mais recente para o computador.
- Microsoft® Windows® 2000, Microsoft Windows NT® 4.0, Windows Millennium Edition (Me), Windows 98, Windows 95, Novell NetWare 3x ou posterior, Linux, Solaris, UnixWare ou DOS.
- O Windows NT exige Service Pack 5 ou posterior.
- Para NetWare, atualize o último Pacote de Suporte disponível. Os NLMs necessários estão incluídos neste CD.

Também é possível fazer download do software necessário a partir dos sites da Microsoft e da Novell.

### Pacotes de Serviço da Microsoft

Vá ao seguinte site da Microsoft na Web para obter as últimas informações sobre o Pacote de Serviço: <http://www.microsoft.com/ntserver>. Se o endereço da Web tiver sido alterado, vá ao site principal da Microsoft e pesquise o termo 'Service Pack'.

### Pacotes de Suporte da Novell NetWare

Vá ao seguinte site da Novell na Web para obter as últimas informações sobre o Pacote de Suporte: <http://support.novell.com/misc/patlst.htm>.

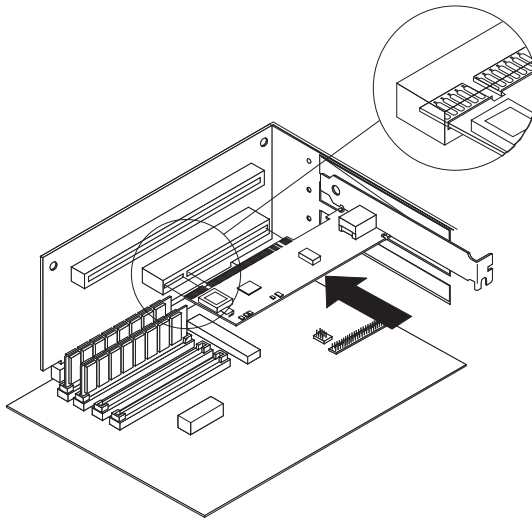
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## Instalando a Placa

1. Desligue o computador e todos os dispositivos conectados, e desconecte todos os cabos do computador e todos os dispositivos conectados.

**Atenção:** Desligue e desconecte o computador antes de remover a tampa. A falha no procedimento pode colocar você em perigo e danificar a placa, o computador ou ambos. Para servidores que suportam tecnologia Hot Plug, consulte a documentação do servidor.

2. Remova o suporte da tampa de um slot de 32 bits livre removendo o parafuso que o segura. Certifique-se de que o suporte da tampa não entre em contato com nenhuma peça condutora da placa de sistema.
3. Se desejar ativar o recurso Wake on LAN<sup>®</sup>, consulte “Utilizando o Wake on LAN” na página 1-4 antes de concluir o restante das etapas.



4. Empurre a placa para dentro do slot até que esteja firmemente encaixada e, em seguida, prenda o suporte da placa com o parafuso removido na etapa 2.
5. Repita as etapas 2 a 4 para cada placa que deseja instalar.
6. Recoloque a tampa do computador, conecte todos os cabos e conecte o computador a uma tomada elétrica.
7. Ligue o computador. O BIOS do computador atribui recursos para as placas automaticamente. Se ocorrer um erro de configuração do PCI, consulte a seção sobre detecção de problemas de configuração do PCI no Apêndice A.

## Conectando o Cabo de Rede

Conecte o cabo de rede à placa utilizando cabos de rede TPE (Twisted Pair Ethernet) de Categorias 3, 4 ou 5 para redes de 10 Mbps ou um cabo TPE de Categoria 5 para redes de 100 Mbps. Para obter mais detalhes, consulte o Apêndice B.

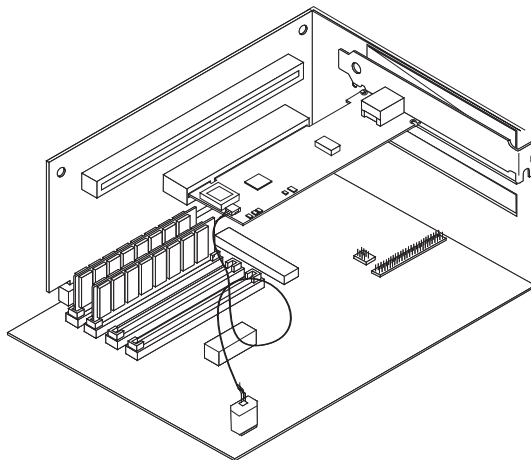
Para configurar a placa, consulte as instruções para o sistema operacional em “Instalando os Drivers de Dispositivos de Rede” na página 1-5.

## Conectando o Cabo de Alimentação Wake on LAN

**Nota:** O cabo Wake on LAN não é necessário para sistemas compatíveis com PCI 2.2. Entretanto, é possível conectar o cabo nesses sistemas sem nenhum efeito adverso.

Para que o recurso Wake on LAN funcione corretamente, a placa deve estar conectada a uma fonte de alimentação contínua. Isso permite que a placa monitore a rede, mesmo se o computador estiver desligado. Para instalar o cabo de alimentação Wake on LAN, siga estas instruções:

1. Desligue o computador e todos os dispositivos conectados. Desconecte todos os cabos do computador.
2. Remova a tampa do computador.
3. Localize o conector Wake on LAN de 3 pinos na placa. Conecte uma extremidade do cabo Wake on LAN à placa, conforme mostrado na ilustração a seguir.



4. Conecte a outra extremidade do cabo Wake on LAN à placa de sistema, conforme mostrado na ilustração.

5. Alguns computadores podem exigir a alteração de uma configuração no computador BIOS ou no programa de Configuração para ativar o recurso Wake on LAN. Verifique a documentação que acompanha o computador para obter mais informações.
6. Recoloque a tampa do computador e ligue a máquina.

### **Utilizando o Wake on LAN**

O recurso Wake on LAN opera de acordo com uma especificação publicada para placas de rede capazes de monitorar atividade de rede mesmo quando o computador está desligado.

As placas Wake on LAN possuem um modo de espera com baixa energia que fica ativo quando o resto do computador está sem energia. A placa responde a um pacote de ativação enviado por outro computador ou dispositivo de rede. Geralmente, esse pacote de ativação faz com que a placa envie um sinal ao computador para ativar e executar um programa predefinido.

Para obter mais informações sobre configuração e utilização do recurso Wake on LAN, consulte as breves informações sobre Wake on LAN em <http://www.ibm.com/pc/us/infobrf/iblan.html>.

Consulte o Apêndice A para obter detecção de problemas gerais e uma lista de problemas e soluções comuns para operabilidade Wake on LAN.

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## Instalando os Drivers de Dispositivos de Rede

Esta seção inclui procedimentos de instalação do driver de dispositivo para os seguintes sistemas operacionais:

- Windows 2000 (para Windows 95, Windows 98 e Windows Me, consulte o Guia do Usuário online)
- Servidor Windows NT 4.0
- Novell NetWare 5.x (para clientes 3.x, 4.x e DOS, consulte o Guia do Usuário online)
- Linux, Solaris, UnixWare 2.x e 7.0 (consulte o Guia do Usuário no CD)

É possível instalar drivers de dispositivo diretamente do CD, ou criar disquetes de instalação. Para criar disquetes de instalação, consulte “Criando um Disquete” na página 1-8.

### Windows 2000

Após instalar a placa no computador, conectar o cabo, ligar o cabo de alimentação e iniciar o computador, o Windows exibirá a janela Encontrado Novo Hardware e o Assistente Encontrado Novo Hardware será iniciado. Siga esse procedimento para instalar o driver de dispositivo correto:

1. Insira o CD *Família de Placas do Servidor IBM 10/100 Ethernet* na unidade de CD-ROM. Se o CD iniciar automaticamente, feche a janela.
2. Na janela Bem-Vindo ao Assistente, clique em **Avançar**.
3. Clique em **Pesquisar** e, em seguida, em **Avançar**.
4. Na janela Localizar Driver, selecione a caixa de opções **CD-ROM** e, em seguida, clique em **Avançar**.
5. Clique em **Avançar**.
6. Clique em **Concluir**.
7. Reinicie o computador.

**Nota:** Para Windows 2000, o utilitário PROSet 2 de propriedades da placa não é automaticamente instalado com a instalação do driver de dispositivo de rede. Para instalar o PROSet 2, faça o seguinte:

- Vá para a opção Instalar Recursos Avançados no CD do programa Autorun.exe.
- Ou, execute o programa setup.exe a partir do diretório de Configuração no CD.

### Servidor Windows NT 4.0

O driver de dispositivo E100NT4.SYS NDIS 4.0 suporta o Servidor Windows NT 4.0. Não é suportado pelo Windows NT 3.51 ou versões anteriores do Windows NT.

**Nota:** Antes de instalar este driver de dispositivo, releia os requisitos do Service Pack em “Requisitos do Sistema” na página 1-1. Se você estiver instalando também o Windows NT 4.0 nesse momento, é necessário criar primeiro um disquete para a instalação do driver. Consulte “Criando um Disquete” na página 1-8.

Para instalar o driver de dispositivo, siga estas instruções:

1. Clique em **Iniciar, Configurações** e, em seguida, em **Painel de Controle**.
2. Clique no ícone **Rede**.
3. Clique em **Placas** e, em seguida, em **Adicionar**.
4. Clique em **Com Disco**.
5. Insira o CD *Família de Placas do Servidor IBM 10/100 Ethernet* na unidade de CD-ROM.
6. Digite o caminho da unidade de CD-ROM e, em seguida, clique em **OK**.
7. Siga as instruções na tela para instalar os drivers de dispositivos. Quando a placa for adicionada, será exibida na lista de placas de rede.
8. Clique em **OK** e, em seguida, em **Fechar**. Quando solicitado, reinicie o computador.

## **Novell NetWare 5.x**

**Nota:** Para outro servidor NetWare e sistemas operacionais clientes, consulte o Guia do Usuário online no CD.

Utilize o programa de instalação NetWare para instalar o driver de dispositivos de placas (nome do driver de dispositivo: ce100b.LAN na pasta /nwserver). Releia os requisitos do Service pack em “Requisitos do Sistema” na página 1-1.

**Nota:** Antes de instalar o driver de dispositivo, carregue os drivers DOS ou NetWare da unidade de CD-ROM do servidor ou crie um disquete a partir do CD *Família de Placas do Servidor IBM 10/100 Ethernet* em um computador diferente. Consulte “Criando um Disquete” na página 1-8.

Para instalar o driver de dispositivo, siga estas instruções:

1. No console NetWare, digite nwconfig e pressione Enter.
2. Clique em **Opções do Driver** e, em seguida, pressione Enter.
3. Clique em **Configurar drivers de rede** e, em seguida, pressione Enter.
4. Clique em **Carregar um driver adicional** e, em seguida, pressione Enter.
5. Insira o CD *Família de Placas do Servidor IBM 10/100 Ethernet* na unidade de CD-ROM, ou insira o disquete criado no driver de disquete e selecione **Instalar um driver não listado** pressionando Inserir.

6. Se estiver utilizando um disquete, pressione Enter. Se estiver utilizando o CD, pressione F3 e especifique a unidade de CD-ROM como o caminho de origem.
7. Pressione Enter para selecionar o driver.
8. Clique em **Sim** e, em seguida, pressione Enter.
9. Para modificar quaisquer parâmetros ou protocolos do driver de dispositivo, clique em **Selecionar/Modificar parâmetros e protocolos do driver** e, em seguida, pressione Enter. O número do slot é um parâmetro necessário e deve ser especificado. Se você possuir várias placas, especifique o número do slot da placa que você está configurando no momento. Após terminar a configuração do driver de dispositivo, clique em **Salvar parâmetros e carregar driver** para continuar.

**Nota:** Se o computador contém uma única placa do Servidor IBM 10/100 Ethernet, é possível especificar qualquer número para o slot. O driver detecta automaticamente o número correto do slot e é carregado com sucesso.

Se o sistema contém mais de uma placa do Servidor IBM 10/100 Ethernet, pressione Alt+Esc para ir para a tela do console no NetWare a fim de encontrar os números de slot válidos para as placas. Digite LOAD CE100 e pressione Enter. O driver de dispositivo tenta carregar e o avisa sobre os números de slot disponíveis. Grave os números dos slots e então pressione Esc para parar o carregamento do driver de dispositivo. Pressione Alt+Esc para retornar à janela Instalar e especifique o número de slot correto.

10. Para a instalação da janela do driver de dispositivo, pressione Esc até que a janela Opções de Configuração seja exibida e, então, siga as instruções na tela.
11. Clique em **Sair** para retornar ao prompt do console do servidor.
12. Se estiver instalando várias placas, repita o processo de instalação do driver de dispositivo para cada nova placa no servidor.

**Nota:** Se a placa não funcionar após a instalação, talvez seja necessário modificar o tipo de quadro ou as instruções de LOAD e BIND no arquivo AUTOEXEC.NCF.

## Outros Sistemas Operacionais

Para obter instruções sobre como instalar os drivers de dispositivos de rede em outros sistemas operacionais, procure informações de auxílio no diretório \info ou no arquivo Readme no diretório onde estão os drivers de dispositivos.

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## Criando um Disquete

Se necessitar utilizar um disquete para instalar os drivers de dispositivo da placa, execute o utilitário `makedisk.bat` que corresponda ao seu SO. Os seguintes arquivos de utilitário estão no diretório raiz do CD *Família de Placas do Servidor IBM 10/100 Ethernet*:

Windows NT 4.0	MAKENT.BAT
Windows 2000	MAKEW2K.BAT
Windows 9x	MAKEW9X.BAT
NetWare 4.x e 5.x	MAKENW.BAT

Para obter mais detalhes sobre esse utilitário, consulte o arquivo `Readme.txt` no diretório raiz do CD *Família de Placas do Servidor IBM 10/100 Ethernet*.

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## Instalação e Configuração Adicionais

A família de Placas do Servidor IBM 10/100 Ethernet suporta muitos recursos de rede avançados:

**Adapter Teaming:** Maximiza o rendimento e a tolerância a falhas em servidores com os seguintes recursos:

- **AFT (Adapter Fault Tolerance)** - Fornece redundância automática para a placa. Se a placa principal falha, a placa secundária assume. A AFT suporta de duas a oito placas por grupo. Esse recurso funciona com qualquer hub ou chave.
- **ALB (Adaptive Load Balancing)** - Permite equilibrar o fluxo de dados de transmissão entre duas a oito placas. Também inclui uma opção de AFT interna. Observe que, com o ALB, para recepção, somente a placa principal pode receber o tráfego esperado. Esse recurso funciona com qualquer chave.
- **Intel Link Aggregation ou FEC (Fast EtherChannel) Cisco** - Cria um grupo de duas a oito placas para aumentar o rendimento da transmissão e da recepção. Também inclui tolerância à falha interna e equilíbrio de carga. Exige uma chave com Agregação de Link ou capacidade FEC.
- **802.3ad - IEEE 802.3ad** - Desempenha padrão de tecnologia semelhante ao padrão FEC (Fast EtherChannel) com adição de agregação de equipe dinâmica. Exige uma chave de capacidade 802.3ad, configurada para combinar capacidades estáticas ou dinâmicas.

**LAN Virtual:** Crie LANS Virtuais para seus grupos de trabalho a fim de aumentar a segurança e a eficiência da rede.

**PROSet 2:** Use este utilitário para configurar a placa.

**Recursos de gerenciamento:** Configure Wake on LAN e Boot Agent.



**Pacote de Prioridades:** Utilize esses recursos para configurar filtros de prioridade no tráfego da rede.

**Pacote de Proteção:** Use esse utilitário de criptografia para proteger a confidencialidade e a autenticidade do tráfego de IP na LAN.

Para obter mais informações sobre esses recursos, consulte o diretório \info no CD.



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## Apêndice A. Detecção de Problemas

Este apêndice descreve ações de correção para problemas comuns.

### 1. Verifique os LEDs na placa.

Se o indicador LINK não estiver aceso, verifique todas as conexões na placa e no parceiro do link. Certifique-se de que o parceiro do link esteja definido para 100 Mbps e transmissão simultânea e que o driver de dispositivo esteja sendo executado.

### 2. Certifique-se de que o cabo esteja instalado corretamente.

O cabo de rede deve ser conectado de forma segura a todas as conexões. Se o cabo estiver conectado, mas o problema persistir, tente um cabo diferente.

### 3. Teste a placa.

A partir do DOS, execute a placa e os testes de rede em *diag100.exe*, localizados no diretório raiz do CD da *Placa do Servidor IBM 10/100 Ethernet*.

### 4. Verifique a seguinte tabela para obter soluções para resolver o problema.

Se nenhuma destas etapas funcionar, consulte o Apêndice C.

Problema	Solução
O computador não pode encontrar a placa.	<ul style="list-style-type: none"><li>• Certifique-se de que a placa esteja firmemente encaixada no slot.</li><li>• Tente um slot PCI busmaster diferente. Consulte a documentação do servidor para identificar os slots busmaster.</li><li>• Tente uma Placa IBM 10/100 Ethernet diferente.</li></ul>
Diagnósticos transmitidos, mas a conexão falhou.	<ul style="list-style-type: none"><li>• Tente executar o teste de diagnóstico Emissor-Receptor.</li><li>• Certifique-se de que o cabo de rede esteja conectado de forma segura.</li></ul>
Uma placa parou de funcionar após a instalação da placa da família IBM 10/100 Ethernet.	<ul style="list-style-type: none"><li>• Certifique-se de que o cabo esteja conectado à Placa IBM 10/100 Ethernet e não a outra placa.</li><li>• Verifique se há conflito de recursos. Consulte "Detecção de Problemas na Configuração do PCI" na página A-2.</li><li>• Certifique-se de que ambas as placas estejam firmemente encaixadas nos slots.</li><li>• Verifique todos os cabos.</li></ul>

Problema	Solução
A placa parou de funcionar sem causa aparente.	<ul style="list-style-type: none"> <li>• Tente encaixar a placa novamente.</li> <li>• Os arquivos do driver de dispositivo de rede podem estar danificados ou terem sido excluídos. Tente reinstalar os drivers de dispositivo.</li> <li>• Tente uma placa IBM 10/100 Ethernet diferente.</li> <li>• Tente ativar ou desativar as configurações de auto-negociação no parceiro de link (esta configuração deve ser a mesma para ambos, chave e placa). <b>Nota:</b> O LED LNK da placa deve estar aceso mesmo que as comunicações entre a placa e seu parceiro de link não tenham sido estabelecidas corretamente. A configuração adequada dos parceiros de link consiste em ambos os lados serem definidos para auto-negociação ou definidos com a mesma velocidade e definições duplex.</li> </ul>
O LED LNK não acende.	<ul style="list-style-type: none"> <li>• Certifique-se de que tenha instalado o driver de dispositivo da placa.</li> <li>• Verifique todas as conexões da placa ou da chave.</li> <li>• Tente outra porta no repetidor de buffer ou chave.</li> <li>• Tente ativar ou desativar as definições de auto-negociação no parceiro de link (esta definição deve ser a mesma para ambos, chave e placa).</li> </ul>
O recurso Wake on LAN não está funcionando.	<ul style="list-style-type: none"> <li>• Certifique-se de que o cabo Wake on LAN esteja conectado e de que o computador esteja recebendo energia.</li> <li>• Verifique o BIOS para as definições de WAKE on LAN. Talvez seja necessário configurar alguns computadores para Wake on LAN. Consulte a documentação que acompanha o computador.</li> <li>• Certifique-se de que o cabo de rede esteja completamente conectado à placa.</li> </ul>

## Detecção de Problemas na Configuração do PCI

Alguns computadores PCI exigem etapas adicionais para configurar uma placa PCI. Tente o seguinte se tiver problemas com a configuração da placa.

- Desative o Plug and Play no BIOS. Em alguns computadores, talvez seja necessário utilizar o programa de configuração do BIOS para desativar o Plug and Play, se os recursos não forem atribuídos corretamente.
- Ative o slot PCI. Em alguns computadores, talvez seja necessário utilizar o programa de Configuração do BIOS para ativar o slot PCI. Isto é especialmente comum em computadores PCI com o código PhoenixBIOS.
- Ative o slot para busmaster. É necessário instalar a Placa do Servidor IBM 10/100 Ethernet em um slot busmaster. Alguns programas de configuração do BIOS exigem a ativação do slot para busmaster/master. Verifique o

programa de configuração do BIOS e a documentação do computador para certificar-se de que o slot esteja definido para busmaster/master.

- Configure o slot para interrupções disparadas por nível. O slot PCI que a placa está utilizando deve ser configurado para interrupções disparadas por nível em vez de interrupções disparadas pela borda. Verifique o programa de configuração do BIOS para assegurar-se de que o disparo por nível esteja configurado.
- Reserve endereços de memória e interrupção para as placas ISA. Isso evita que as placas PCI tentem utilizar as mesmas definições das placas ISA. Verifique o programa de configuração do BIOS; deve haver opções de IRQ, tais como Ativar para ISA ou Desativar para PCI.

Há aqui alguns exemplos de parâmetros do programa de configuração do BIOS:

Número do slot PCI:	slot onde a placa está instalada (1-3)
Mestre:	Ativado
Escravo:	Ativado
Temporizador em latência	40 - 80
Interrupção:	Escolha uma das várias que a Configuração do BIOS fornece
Borda/Nível:	Nível

As palavras exatas dos parâmetros variam entre os diferentes computadores.

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## Sites da Web para Atualizações de Software

É possível fazer download das atualizações dos softwares da Microsoft e da Novell a partir dos seguintes sites:

- **Microsoft Service Pack 5:**<ftp://ftp.microsoft.com/bussys/winnt/winnt-public/fixes/usa/nt40/ussp5/>
- **Microsoft Service Pack 4:**<ftp://ftp.microsoft.com/bussys/winnt/winnt-public/fixes/usa/nt40/ussp4/>
- **Microsoft Service Pack 3:**<ftp://ftp.microsoft.com/bussys/winnt/winnt-public/fixes/usa/nt40/ussp3/>
- **Microsoft NDIS Driver**  
**Hotfix:**<ftp://ftp.microsoft.com/bussys/winnt/winnt-public/fixes/usa/nt40/hotfixes-postsp3/ndis-fix/>
- **Novell Support Pack 6 para NetWare 4.11 ou Support Pack 1 para NetWare 5.0:**<http://support.novell.com/misc/patlst.htm>



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## Apêndice B. Especificações da Placa

Compatibilidade	Sistemas PCI v2.2
Conectores (Cabos) e Fiação de Mídia	<ul style="list-style-type: none"><li>• RJ-45</li><li>• Utiliza cabeamento de Categoria 5 em 100 Mbps</li><li>• Suporta 100BASE-TX Fast Ethernet</li></ul>
Modo de taxa de dados	10 ou 100 Mbps
Níveis de interrupção	PCI: INTA (INTA e INTB para Placas de Servidores de Porta Dupla 10/100 Ethernet)
Buffer de transmissão/recepção SRAM	6 KB
Requisitos de energia	300 mA @ +5 V CC (1,5 watts) (3 watts @ 5V CC para Placas de Servidores de Porta Dupla 10/100)
Interrupção	PCI: INTA (INTA e INTB para Placas de Servidores de Porta Dupla 10/100)
LEDs	Link/Atividade
Dimensões	5,1 cm x 11,9 cm (2 pol. x 4,7 pol.) excluindo suporte
Temperatura de operação	0° a 55°C (32° a 131°F)
Umidade	10% a 90% sem condensação
Conformidade aos padrões	IEEE 802.3, IEEE 802.3x, IEEE 802.1p, IEEE 802.1q
Software de diagnóstico	<ul style="list-style-type: none"><li>• Na placa</li><li>• PROSet</li><li>• Originador da Resposta</li></ul>
Concordância e Certificação	<ul style="list-style-type: none"><li>• Segurança - UL</li><li>• FCC Classe B</li><li>• CE e Isenção</li><li>• C-tick (Australiana)</li></ul>
Modo Duplex	Transmissão Simultânea/Transmissão Não-simultânea





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## Appendix C. Help and service

This section contains information on how to obtain online and telephone technical support.

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### Online technical support

Online technical support is available during the life of your product. Online assistance can be obtained through the Personal Computing Support Web site and the IBM Automated Fax System.

<i>Online technical support</i>	
IBM Personal Computing Support Web site	<a href="http://www.ibm.com/pc/support">http://www.ibm.com/pc/support</a>
IBM Automated Fax System	1-800-426-3395 (U.S. and Canada)

During the warranty period, assistance for replacement or exchange of defective components is available. In addition, if your IBM option is 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.

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### Telephone technical support

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

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

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

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

For the support telephone number and support hours by country, refer to the following table or to the enclosed technical support insert. Support phone numbers are also available by clicking **HelpCenter phone list** on the IBM support Web page at

<http://www.ibm.com/pc/support>

If the number is not provided, contact your IBM reseller or IBM marketing representative. Response time might vary depending on the number and nature of the calls received.

<i>Support 24 hours a day, 7 days a week</i>	
Canada (Toronto only)	416-383-3344
Canada (all other)	1-800-565-3344
U.S.A. and Puerto Rico	1-800-772-2227

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## Appendix D. Product warranty and notices

This section contains the warranty period for your product and the IBM Statement of Limited Warranty.

**Machine** - 10/100 Ethernet Server and 10/100 Dual Port Server Adapters **Warranty period\*** - One 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.*

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### IBM Statement of Limited Warranty

#### 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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## Notices

This publication was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. 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. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

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*IBM Director of Licensing  
IBM Corporation  
North Castle Drive  
Armonk, NY 10504-1785*

U.S.A.

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## **Processing date data**

This IBM hardware product and IBM software products that might be packaged with it have been designed, when used in accordance with their associated documentation, to process date data correctly within and between the 20th and 21st centuries, provided all other products (for example, software, hardware, and firmware) used with these products properly exchange accurate date data with them.

IBM cannot take responsibility for the date data processing capabilities of non-IBM products, even if those products are preinstalled or otherwise distributed by IBM. You should contact the vendors responsible for those products directly to determine the capabilities of their products and update them if needed. This IBM hardware product cannot prevent errors that might occur if software, upgrades, or peripheral devices you use or exchange data with do not process date data correctly.

The foregoing is a Year 2000 Readiness Disclosure.

Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments

may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

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## Trademarks

The following terms are trademarks of the IBM Corporation in the United States, other countries, or both:

IBM

Wake on LAN

HelpCenter

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

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

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## Electronic emission notices

10/100 Ethernet Server and 10/100 Dual Port Server Adapters

### Federal Communications Commission (FCC) statement

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

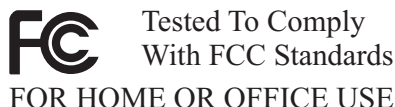
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or 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.

Responsible party:

International Business Machines Corporation  
New Orchard Road  
Armonk, NY 10504  
Telephone: 1-919-543-2193



### **Industry Canada Class B emission compliance statement**

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

### **Avis de conformité a la réglementation d'Industrie Canada**

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

### **Deutsche EMV-Direktive (electromagnetische Verträglichkeit)**

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG-Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM UK, Greenock.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

### **European Union - emission directive**



This product is in conformity with the protection requirements of EU Council Directive 89/366/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM can not accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22/European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

### **Union Européenne - Directive Conformité électromagnétique**

Ce produit est conforme aux exigences de protection de la Directive 89/336/EEC du Conseil de l'UE sur le rapprochement des lois des États membres en matière de compatibilité électromagnétique.

IBM ne peut accepter aucune responsabilité pour le manquement aux exigences de protection résultant d'une modification non recommandée du produit, y compris l'installation de cartes autres que les cartes IBM.

Ce produit a été testé et il satisfait les conditions de l'équipement informatique de Classe B en vertu de CISPR22/Standard européen EN 55022. Les conditions pour l'équipement de Classe B ont été définies en fonction d'un contexte résidentiel ordinaire afin de fournir une protection raisonnable contre l'interférence d'appareils de communication autorisés.

### **Unione Europea - Directiva EMC (Conformidad electromagnética)**

Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 89/336/CEE en lo que a la legislatura de los Estados Miembros sobre compatibilidad electromagnética se refiere.

IBM no puede aceptar responsabilidad alguna si este producto deja de satisfacer dichos requisitos de protección como resultado de una modificación no recomendada del producto, incluyendo el ajuste de tarjetas de opción que no sean IBM.

Este producto ha sido probado y satisface los límites para Equipos Informáticos Clase B de conformidad con el Estándar CISPR22 y el Estándar Europeo EN 55022. Los límites para los equipos de Clase B se han establecido para entornos residenciales típicos a fin de proporcionar una protección razonable contra las interferencias con dispositivos de comunicación licenciados.

## **Union Europea - Normativa EMC**

Questo prodotto è conforme alle normative di protezione ai sensi della Direttiva del Consiglio dell'Unione Europea 89/336/CEE sull'armonizzazione legislativa degli stati membri in materia di compatibilità elettromagnetica.

IBM non accetta responsabilità alcuna per la mancata conformità alle normative di protezione dovuta a modifiche non consigliate al prodotto, compresa l'installazione di schede e componenti di marca diversa da IBM.

Le prove effettuate sul presente prodotto hanno accertato che esso rientra nei limiti stabiliti per le apparecchiature di informatica Classe B ai sensi del CISPR 22/Norma Europea EN 55022. I limiti delle apparecchiature della Classe B sono stati stabiliti al fine di fornire ragionevole protezione da interferenze mediante dispositivi di comunicazione in concessione in ambienti residenziali tipici.

## **Korean B급 규격 증명서**

이 장치는 옥내용으로 보증되었으며 모든 환경에서 사용할 수 있습니다.

## **Japanese statement of compliance for products less than or equal to 20 A per phase**





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