

IBM PS/2 Server System Software Release 1.0 for NetWare 3.11

4/9/93

Contents

Introduction	3
Installation and setup	4
Software compatability	4
Micro Channel adapter compatibility	5
Using NetWare 3.11 and network software	8
Orthogonal RAID-5 Disk Array/2	9
General notes	10
Customer support	11

Copyright © 1990, 1991, 1992, 1993 International Business Machines Corporation (IBM). All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or any means - electronic, mechanical, magnetic, optical, chemical, manual, or otherwise - without the prior written permission of International Business Machines Corporation.

IBM makes no representations or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any purpose. Furthermore, IBM reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of IBM to notify any person of such revisions or changes.

The software described in this document is furnished under a license agreement agreement. The software may be used or copied only in accordance with the terms of the agreement.

Product names mentioned herein are for identification purposes only and may be trademarks and / or registered trademarks of their respective companies or manufacturers.

The following are trademarks of the indicated companies: PS/2 Server 195™, PS/2 Server 295™, Disk Array/2™, Maximum Availability and Support System/2™, and Micro Channel™ (International Business Machines Corporation); SQL™ (Microsoft Corporation and Sybase, Inc.); NetWare SQL™ (Novell, Inc).

The following are registered trademarks of the indicated companies: IBM® , OS/2® , and PS/2® (International Business Machines Corporation); ORACLE® (Oracle Corporation); Novell® and NetWare® (Novell, Inc.); Lotus Notes® (Lotus Corporation).

IBM PS/2 Server System Software Release 1.0 for NetWare 3.11
Release Note (Part Number 71G1573 — April, 1993)

Introduction

This release note accompanies Release 1.0 of your IBM PS/2 Server system software for NetWare 3.11. It is provided for use by the system administrator when installing, maintaining, and troubleshooting the PS/2 Server.

This note supplements information contained in the following documentation:

- Novell NetWare 3.11 documentation set.
- IBM PS/2 Server 195/295 System/Maintenance Information Manual documentation set

Additional release information is provided as necessary in supplemental addenda to this release note.

This note includes information about the following software components:

- IBM PS/2 Server NetWare Extensions Software (diskettes)
IBM PS/2 Server Reference Disk v1.6
IBM PS/2 Server 195/295 Installation Diskette (for NetWare 3.11)
- IBM PS/2 Server Orthogonal RAID-5 Disk Array/2 v1.0
Installation Diskette v1.0 (for NetWare 3.11)
- IBM PS/2 Server 195/295 Maintenance Package (2 diskettes)
IBM PS/2 Server 195/295 Diagnostic Monitor Tests v2.0
IBM PS/2 Server 195/295 Field Maintenance System Tests v2.0
- Novell NetWare Version 3.11

Read the following section of this note before installation:

- ✓ Installation and setup

Read the following sections after installation of the basic system, when you are ready to add options and configure the system:

- ✓ Micro Channel adapter compatibility
- ✓ Using NetWare
- ✓ Orthogonal RAID-5 Disk Array/2

Read the following sections as you manage, maintain, and troubleshoot the system:

- ✓ General notes
- ✓ Customer support

Installation and setup

Your IBM PS/2 Server is shipped with NetWare installed. Once your server is unpackaged, assembled, and set up according to the instructions in Chapters 2 and 3 of the Installation Guide section of the *IBM PS/2 Server 195/295 System/Maintenance Information Manual*, you will need to install your software, unless it has been preinstalled at the factory. Refer to Chapter 2, "Software Installation," of the Administrator's Guide for information on how to do so.

For information on installing additional server options, refer to the Hardware Reference section of the *IBM PS/2 Server 195/295 System/Maintenance Information Manual*.

Software compatibility

The PS/2 Server 195/295 requires BIOS v1.6 and Reference Diskette version 1.6.

Micro Channel adapter compatibility

This section lists Micro Channel adapters tested on the PS/2 Server. Table 1 lists some additional Micro Channel information for PS/2 Servers.

Not all Micro Channel adapters work properly in high-performance 486-based systems. These adapters have been tested and are verified compatible with PS/2 Server systems. The list is continuously updated. Contact IBM for more information.

Tested adapters:

32-bit Ethernet

Etherlink/MC 32 3C527
(3COM)

Novell NE/2-32
(Novell)

3COM Bus-Master TPX
(3COM)

32-bit Token Ring

IBM LANStreamer MC 32
(Refer to note 4 in Table 1.)

Smart 16/4 MC 32 Ringnode
(Madge) (Refer to note 5 in
Table 1.)

16-bit Ethernet

Etherlink/MC 3C523 Rev. B (or
later)
(3COM). Refer to note 3 in
Table 1.)

IBM 6451091
Adapter/A

16-bit Token Ring

IBM 16F1133
16/4 Adapter/A

Communication Port

IBM 6451013
(Dual Async Adapter/A)
(IBM)

IBM 53F2601
Realtime Interface Co-Proces-
sor Portmaster Adapter/A

IBM 74F3465
3270 Connection

BOCA.MCA
(Parallel Port Adapter)
(Boca Research)

Internal Modem

Smartmodem 2400
(2400 bps)
(Hayes)

Turbo PS96/V.32
(9600 bps)
(Incomm)

UDS 208A/B
Synchronous Modem
(Universal Data Systems)

Micro Channel SCSI Controller

Adaptec AHA1640 MC
(Adaptec Inc.)

Wangtek MC-02
(Wangtek Inc.)

SDLC /X.25

DCA ISCA MCA
(Digital Communications
Assoc.)

UPS (Not an adapter)

APC 800RT and 1200 VX
(American Power
Conversion)

Unsupported adapters:

16-bit Ethernet

Etherlink MC 3C525 Rev. A
(3COM) (Fails on all 486 systems.)

WD8003ET/A
(Western Digital)

TLCE
(Tiara)

16-bit Token Ring

Smart Ringnode/2
(Madge)

Irma Track
(DCA) (supports only 16 MB memory)

Tape Controller

6157 Streaming Tape
(IBM)

Table 1

Micro Channel compatibility notes

1	When installing an 8-bit adapter in a 32-bit Micro Channel adapter slot, ensure that the adapter's connector fingers are aligned with the <i>bottom</i> of the upper 16-bit section of the slot — that is, flush with the divider in the middle of the slot (see Figure 3-25 in the Hardware Reference section of the <i>IBM PS/2 Server 195/295 System/Maintenance Information Manual</i> .)
2	The reference diskette Automatic Configuration option sets up the IBM Multiprotocol Adapter/A as COM2. If you need to use this adapter for SDLC, you must manually reconfigure the adapter as desired. Repeat this each time that you run the automatic option.
3	Do not use older versions of the 3-COM Etherlink/MC 3C523 network adapter on a IBM PS/2 Server computer—these versions do not work reliably on 486-based machines. Use the following information to determine whether an adapter is an older or newer version: 1. If the package is marked with “MC3C523B,” the adapter is the new version. Make sure that your NetWare ODI server driver for this adapter (3C523.LAN) is version 3.15 (or later). 2. At the bottom corner of the adapter—the end opposite from the network cable connector—is a “Board Level Assembly Number,” 4233-0 <i>n</i> . <i>n</i> = 8 or higher is the new version.
4	The IBM LAN Streamer MC 32 Token Ring Adapter does not work reliably on older versions of the PS/2 Server 50 MHz processor board.

Table 1 (Continued)

Micro Channel compatibility notes

5	<p>The Smart 16/4 MC Ringnode Token Ring adapter by Madge is a high-performance bus-mastering adapter with 32-bit addressing capability.</p> <p>When configuring the Smart 16/4 MC Ringnode Token Ring adapter into the server using the reference diskette Configuration Change option, or after running the reference diskette Automatic Configuration option, make the following adjustments:</p> <p>Burst mode: [Immediate Release (Fair)] Ring speed [4 Mbit/s] or [16 Mbit/s]</p> <p>Note that any such adjustments are lost whenever the Configuration Automatic option is used.</p>
6	<p>Some Micro Channel adapters (e.g., IBM Dual Sync, Ungermaun-Bass NIUps) have an enable/disable option accessible through the reference disk's Configuration Change screen. Setting this to disabled turns off some, but not all of the adapter functions and does not fully disable the adapter. To disable an adapter, you must physically remove it from the server.</p>
7	<p>When you install an IBM Dual Async adapter, the reference diskette disables the processor serial port. When you install a BOCA.MCA parallel-port adapter, the reference diskette disables the processor parallel port. To re-enable these ports, use the Change Configuration option to reassign the adapter interrupts, and avoid conflict with the processor-module interrupts. Note that changes made to the configuration of a Micro Channel device are lost if the reference-diskette Automatic Configuration option is run.</p>
8	<p>The server has a built-in VGA connector. The server does not support 8514 and other EVGA adapters. However, 8514 displays in VGA mode can use the VGA connector on the PS/2 Server.</p>
9	<p>When installing the Adaptec SCSI tape controller (AHA-1640 MC), make the following adjustment after running the reference diskette Automatic Configuration option:</p> <p>adapter BIOS: [BIOS disabled]</p> <p>This will speed up the system boot process.</p>
10	<p>If one or more PDAs are present in the server and you are running the reference-disk Automatic Configuration option, ensure that the PDA security keys are connected to the AP and FP parallel ports designated Parallel_1 after the option has completed and port names may have changed.</p>

Using NetWare 3.11 and network software

This section provides general operating system and network software information that you might need.

Table 2 lists general information applying to the server's operating system and network software.

Table 2

General operating-system and network notes

1	The NetWare "REGISTER MEMORY" command does not need to be used on a PS/2 Server since the amount of memory configured in the server is reported correctly by the BIOS to NetWare. You may use the reference diskette "memory allocation" screen to control the amount of memory reported by the BIOS to the operating system.
2	Make sure that AS2EXTS.NLM is always loaded while the system is operating. Although your PS/2 Server may appear to function correctly without AS2EXTS, the system will not be able to detect and correct certain failure conditions unless AS2EXTS is running.

Orthogonal RAID-5 Disk Array/2

Table 3 provides information for the Orthogonal RAID-5 Disk Array/2 (PDAs)

Table 3
Disk Array/2 notes

1	<p>PDA software expects to find security keys installed in the parallel ports designated Parallel Port 1 for both AP and FP, whether these ports are on the modules or on the MicroChannel adapters controlled by the modules. Set the port designations using the reference disk. If the PDA software does not find these keys, the server will not boot.</p> <p>Note: Security keys are not required for servers using FT pairs (two-drive PDAs) only.</p> <p>If you have several adapters installed on one side of the Micro Channel card cage, and for any reason the reference disk's Automatic Configuration option is run, the option may need to disable the current LPT1 in order to use interrupt level 7 for one of the adapters. If this happens, you can re-enable LPT1 manually using the reference disk's Configuration option even if this causes a conflict with the adapter using interrupt level 7, as long as no devices other than the security keys are connected to LPT1.</p>
2	<p>The server automatically checks and if necessary fix PDA Data Sentry data consistency following abnormal shutdown or CMOS corruption. This operation fixes inconsistencies between individual drives in your PDA. It does not, however, fix any inconsistency in your file system. Use VREPAIR to fix file system inconsistencies with NetWare volumes.</p>
3	<p>You should save the disk configuration after setting up or changing your PDA. You can do this by selecting the Backup option from the Disk Subsystem menu of the reference diskette. When done, select View and record the PDA information displayed, including member drive ordering, striping factor, and Data Sentry selection.</p>
4	<p>It is possible to replace a failed PDA member with a drive of a different type (i.e., different manufacturer or drive model). The replacement drive must be at least as large as the failed PDA member. Both PDAUTIL and the reference disk will display warning messages. When PDAUTIL rebuilds a failed PDA member in unattended mode, it first looks for a pre-installed spare of the same type as the other PDA members (i.e., same manufacturer, model and size). If there is not an exact match, PDAUTIL then looks for a spare large enough to be used as a replacement member for the disk array. If there is more than one suitable replacement, PDAUTIL picks the last one in the spare list, regardless of size.</p>
5	<p>Make sure that PDAUTIL.NLM is always loaded while the system is operating. Although your PS/2 Server may appear to function correctly without PDAUTIL, the disk I/O subsystem will not be able to detect and correct certain disk failures unless PDAUTIL is running.</p>

General notes

Table 4 provides general information about this IBM PS/2 Server product release.

Table 4

General notes

1	If NetWare boots in unattended mode without a keyboard connected to the system, a keyboard may not be recognized by NetWare if it is attached while the system is running. If no keyboard is present at startup, use a remote login or a communication program that supports a remote shell.
2	Never attempt to plug in or unplug a mouse when the server is running.
3	If a server with an RMP module installed does not power up, try to push the RMP power-disconnect override switch (the white button on the top of the RMP module, next to the RMP serial ports). This may be necessary if the RMP battery is dead. Contact your customer service representative if this occurs.
4	If you bypass the memory test that is executed by the BIOS during server power-up, the boot procedure may be delayed up to two minutes while SCSI drivers spin up server fixed disk drives. The length of the delay is proportional to the number of drives configured into the system.
5	Many computers, including the IBM PS/2 Server units, cannot format or read a low-density (720KB) formatted diskette from a high-density (1.44MB) drive, unless the "low-density hole" on the diskette is covered. Cover the low-density hole on the diskette before attempting the operation.
6	When entering DIAGMON on a single processor PS/2 Server, the system may appear to hang. Check the 3 LEDs located on top of the CPU board. Flashing LEDs indicate that DIAGMON cannot communicate to its designated console. Set the AP/FP switch located on top of the CPU board to the FP position to use the serial port, and to the AP position to use the system console (i.e., keyboard and VGA monitor).

Customer support

Prior to shipment, IBM PS/2 Server computers are thoroughly tested and exercised at the component and system level. However, since it is not possible to simulate every possible situation that might exist on your network, occasionally you might encounter problems with the server. In such cases, IBM provides prompt technical-service assistance.

After hearing from you, one of our support personnel will discuss the problem with you over the telephone. If possible, a service representative may want to dial into your server using the server's RMP card modem link, and perform remote diagnostics. If this is not possible, and manual diagnostics are required, the service representative will utilize the diagnostic package included with the Server 195/295. Whatever your situation, the IBM support person will work with you until you are satisfied that the issue is resolved.

If you encounter any problem with your server and you or your system administrator cannot resolve it, please contact IBM at the following telephone number:

United States:

Hardware : 1-800-IBM-SERV (1-800-426-7378)

Software: 1-800-237-5511

Canada:

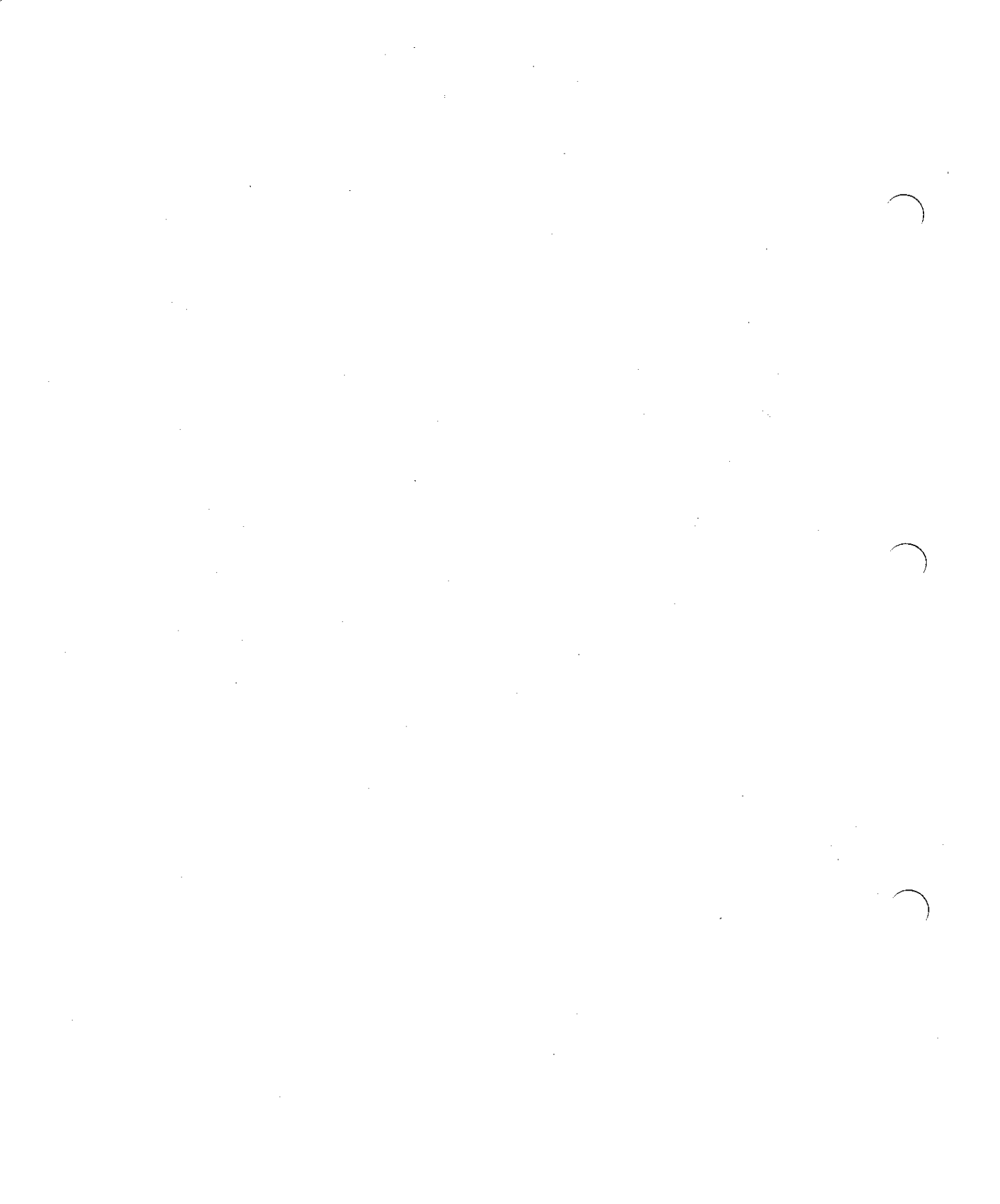
Hardware/Software: 1-800-465-6666

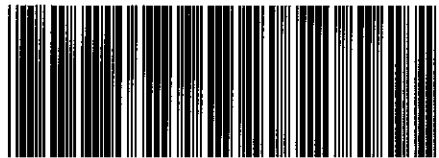
Outside of Canada or the U.S.:

Hardware/Software: Contact the Place of Purchase

For prompt assistance, Customer Service will require the following information. Please have available:

- IBM machine type (8600)
- IBM server serial number
- Your company name
- Name of technical contact
- Company address and telephone number





S71G-1573-00



P71G1573