

IBM Personal Communications /3270 Version 3.0 - Technical Update

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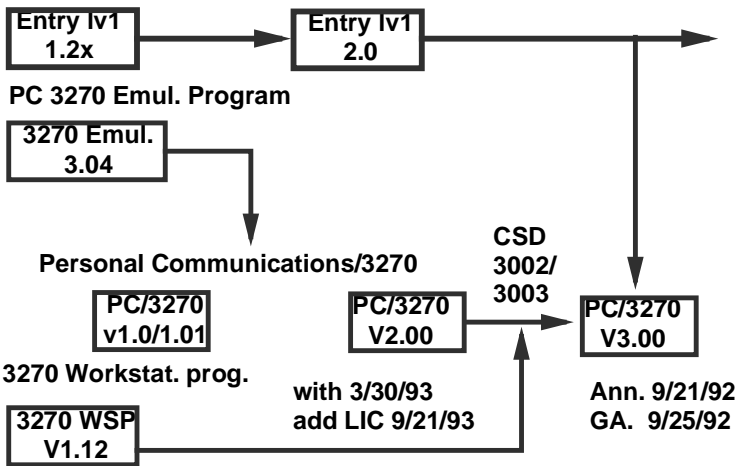
IBM

Product Overview

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Product History

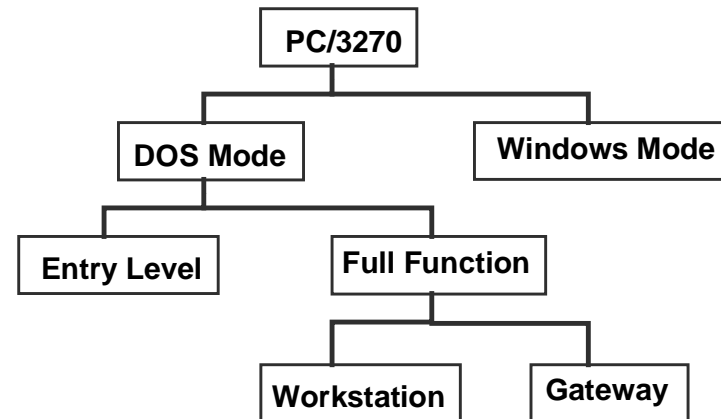
PC 3270 Emul Prog Entry Level



Product Packaging

- **Single Byte Character Set (SBCS)**
 - ▶ Three Program Mode only in a single package
- **Double Byte Character Set (DBCS)**
 - ▶ Windows Mode Only
 - Native Japanese Windows Version 3.0a application

SBCS Product Configuration



Enhancements

- **Connectivity**
 - ▶ CUT Mode
 - ▶ Enhanced Async
 - ▶ Ethernet Gateway (DOS)
- **Network**
 - ▶ Self-defining Dependent LUs
 - ▶ SNA Data Compression/ Decompression

Enhancements

- **Memory**
 - ▶ Conventional memory reduction
 - ▶ DOS Task swapper (DOS)
 - ▶ PCSSWAP (DOS)
 - ▶ UMB utilization (DOS)

Enhancements

- Usability
 - ▶ Dynamic Configuration (Windows)
 - ▶ Import/Export
 - ▶ Insert Mode Cursor (Windows)
 - ▶ Rule Line
 - ▶ Record/Play/Pause (DOS)
 - ▶ Record by Example (Windows)

Enhancements

- Usability
 - ▶ Customization-free DFT-Connection (Windows)
 - ▶ Multi-Language (Windows)
 - ▶ Host Graphics (Windows)
 - ▶ Up to 26 sessions (Windows)
 - ▶ PCSPCLK for GDDM (DOS)
 - ▶ Sharing of common program modules from server

Enhancements

- Usability
 - ▶ APL Support (Windows)
 - ▶ Scroll Bars (Windows)
 - ▶ Support for disabled users' accessories (DOS)
 - Screen reader, PhoneCommunicator, AccessDOS

Enhancements

- 3270 Display Improvements
 - ▶ Windows 3.1 Font Support (Windows)
 - ▶ Non-blinking cursor (Windows)
 - ▶ Underscore Attribute on VGA or XGA (DOS)
 - ▶ ISO 9241 Part-3 DIN 66234 Compliant Font
 - ▶ Large screen size (Windows)

Enhancements

- API

- ▶ Structured Field Support
 - EHLLAPI
 - DDE (Windows)
- ▶ SRPI (Windows)
- ▶ DOS Box EHLLAPI (Windows)

Enhancements

- Utilities

- ▶ Migration Utility (Windows)
- ▶ Enhanced 3270 Setup Utilities (DOS)
- ▶ File Transfer Translation Tables Setup

- OEM Support

- ▶ Attachmate Advanced 3270 Adapter/2
- ▶ Attachmate Advanced 3270 Adapter
- ▶ DCA Irma3 Convertible 3270 Adapter
- ▶ DCA Irma3 Convertible Adapter
- ▶ Xircom Pocket 3270 Adapter
- ▶ Xircom Pocket Token Ring Adapter
- ▶ Xircom Pocket Ethernet Adapter (DOS)
- ▶ ACCTON Ether Pocket CX-TW

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Common New Functions

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SDDLU....

- Requirements

- ▶ VTAM V3R4 (VM) or V3R4.1 (MVS)
- ▶ NCP V5R4, if PU is NCP attached

- Network Station Implementation

- ▶ DOS and Windows Mode
- ▶ LU Type 1 session support
 - Must create a PSID.DEF file

- Does not support Home3270 & non-SNA E

SDDLU....

- Gateway Implementation
 - ▶ TRN, SDLC, and X.25
 - ▶ Configuration option (SDDLU feature)
 - Network stations must have capability

SNA Compression Decompression

- Remote links
- Requirements
 - ▶ VTAM V3R4.1 (VM & MVS)
 - ▶ NCP V6R2
- Network Station Configuration only
- Home3270 & non-SNA DFT not supported

Home3270

- Highlights
 - ▶ Consistent user interface
 - ▶ Protocol Converters
 - IBM 3174 Asynchronous Emulation Adapter
 - IBM 3708 Network Conversion Unit
 - IBM 9370 ASCII Subsystem
 - IBM 7171 ASCII Device Attachment Unit

Home3270.....

- ▶ File Transfer
 - IBM 3270-PC File Transfer Program 1.1.1 (MVS/TSO)
 - IBM 3270-PC File Transfer Program 1.1.1 (VM/CMS)
 - IBM CICS/MVS 3270-PC File Transfer Program (5798-DQH)
 - IBM VSE/SP 3.2 (with IWS)
- ▶ Auto dial capability
- ▶ Shared printer support
 - For 3174 AEA, 3708, & 9370

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Full-Function DOS Mode

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Ethernet Gateway

- **Requirements**

- ▶ **Token Ring & Ethernet Adapter**
- ▶ **LAN Support Program 1.2 or higher**
- ▶ **NDIS device driver's provided by supported adapters**

- **Configuration**

- ▶ **Select LAN via 802.2**
- ▶ **Select adapter number**

Ethernet Gateway

- ▶ **Maximum PIU Size on Downstream option < = 1490 bytes**
- ▶ **Supports TRN Upstream only**

Sample Configuration

CONFIG.SYS

```
Device=\LSP13\PROTMAN.DOS /I:\LSP13
device=\Lsp13\xxx.DOS
DEVICE=\LSP13\DXMA0MOD.SYS 001
DEVICE=\LSP13\DXME0MOD.SYS 4000.....
DEVICE=\LSP13\DXMC0MOD.SYS 4000.....
```

PROTOCOL.INI

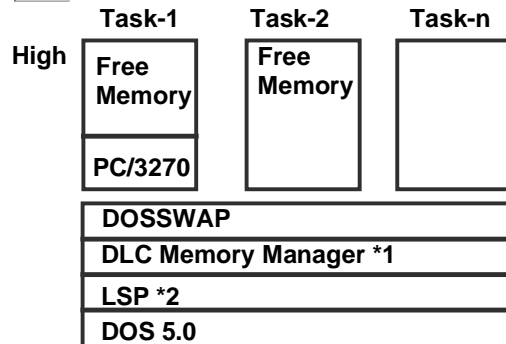
```
PROTMAN_MOD
DriverName = PROTMAN$

DXMEO.MOD
DriverName = DXME0$
Bindings = "",ELNKMC_MOD
```

AUTOEXEC.BAT

```
\LSP13\NETBIND
```

DOS 5 Task Swapper



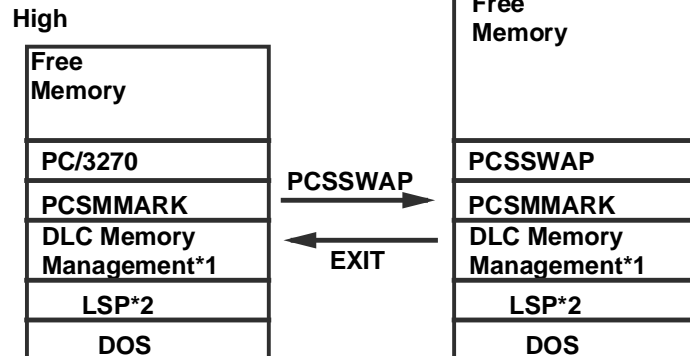
- *1 PCS802.SYS for IEEE 802.2 LAN & NETBIOS LAN
 PCNETB.SYS for NETBIOS LAN
 PCSSDLC.SYS for SDLC
 PCSASYNC.SYS for Asynchronous
- *2 Only required for LAN

DOS 5 Task Swapper

- ▶ Selectable during Customization
- ▶ DLC Memory Manager supports only one adapter/port
- ▶ Hotkey conflict
 - re-define the hotkey for PC/3270

```
define c-esc = [dead] /* CTRL+ESC is reserved by DOS */
define a-esc = [dead] /* ALT +ESC */
define a-tab = [dead] /* ALT +ESC */
define c-pagedown = [change task]
define a-pagedown = [next 1t]
```

PCSSWAP



- *1 PCS802.SYS for IEEE 802.2 LAN & NETBIOS LAN
 PCNETB.SYS for NETBIOS LAN
 PCSSDLC.SYS for SDLC
 PCSASYNC.SYS for Asynchronous
- *2 Only required for LAN

PCSSWAP

- ▶ Selectable during Customization
- ▶ Each DLC Memory Manager supports only one adapter/port
- ▶ Single application ONLY

UMB Utilization

- Attempts to get internal buffer from
- UMB by default
 - ▶ 80386 or better systems ONLY
 - ▶ DOS 5, DOS=UMB in CONFIG.SYS
 - ▶ /U option for TQDOS/TQDOSE
 - ▶ /NUMB option for TQDOS/TQDOSE

Network Station

Function	Memory Space Required (KB)	
	without EMS	with EMS
Base Program:		
without host print	91	67
with host print	98	67
Host Connection (model-2 screen):		
Non-SNA DFT	34	8
Each additional session	9	9
SNA DFT	47	11
Each additional session	18	18
IEE 802.2 LAN	59	13
Each additional session	13	13
NETBIOS LAN	48	11
Each additional session	19	19
SDLC	56	16
Each additional session	12	12
Asynchronous	67	42
Each additional session	14	14
X25	260	260
Each additional session	17	17

Network Station

Function	Memory Space Required (KB)	
	without EMS	with EMS
For each model-3 session	2	2
For each model-4 session	5	5
Full screen model-5 on VGA	9	9
Enhanced front of screen	1	1
Display PC/3270 provided font	15	15
DOS graphic save option		
VGA/XGA adapter	4	4
Other video adapters	8	8
Local Copy	15	15
Host directed print (with local copy)	20	20
EHLAPI w/o buffer	32	2
LLAPI	14	0
PCSPCLK	36	36
SRPI w/o buffer	19	19
PS Copy	11	2
Record/Play function	15	0

Server Install

- LAN Applications Support
 - ▶ PC LAN Program 1.32 or above
 - ▶ DOS LAN Requester 1.3 or 2.0
 - ▶ Novell Netware 3.11
- Sharing PC/3270 V3 files from a server
 - ▶ Install (INSTALL.EXE)
 - ▶ Run the CONFIG.EXE

Server Install

- Files stored to local or network drive
 - PRT file (if printer support is configured)
 - BAT file
 - KDF file
 - UTLINFO.DAT
 - 3270DISP.TDF
 - BFG.SAV
- ▶ Start-up Batch File will load executable files from server disk

File Transfer Table Editor

- PCSXFRED
- File transfer table editor
 - Modifies default File Transfer Table (IBMFTTBL.IND)

Sample of myxfer.def

```
*  
* Any comment should start with '*'  
*  
* Convert ASCII '[' to EBCDIC AD,  
*   and EBCDIC AD to ASCII '['  
a2e '[' AD  
* Convert ASCII ']' to EBCDIC BD,  
*   and EBCDIC BD to ASCII ']'  
a2e ']' BD
```

FOS Improvements

- VGA, XGA & XGA-II
 - ▶ Underline attribute
 - ▶ Screen background color
 - ▶ 3270 & Euro style, ISO 9241 part 3 & DIN 66234 Font
 - Require ISO capable PS/2 Displays

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Entry Level DOS Mode

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Product Contents

- CUT mode support
- Home Terminal(Home3270)
- ISO 9241 part 3 / DIN 66234 capable font selection
 - ▶ Requires ISO Capable Video Adapter and Monitor

Product Contents

- Support for disabled users' applications
- Underscored attribute display on VGA and XGA monitors
- Remappable Hot Key
- User-definable 3270 extended color
- User-definable background color on 16-bit VGA

Installation/Utility

- Installation
 - ▶ INSTALL.EXE
- Utility
 - ▶ Configuration - CONFIG.EXE
 - ▶ 3270 Setup and Utility - PCSUTIL.EXE
 - Display Setup
 - Keyboard Definition
 - File Transfer
 - Vital Product Data Setup
- Auto-dial executor - PCSDIAL.EXE

Memory Requirements

● CUT Emulation

Function	Module Name	Memory Space Req. (KB)
Base Program	PC3270.COM	23 through 45
EEHLLAPI	EEHLLAPI.EXE	14
EESRPI	EESRPI.COM	12

● Home Terminal (Home3270)

Function	Module Name	Memory Space Req. (KB)
Base Program	PC3270.COM	45
Async Driver	ASC3270.COM	17
EEHLLAPI	AHLLAPI.EXE	15

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Windows Mode

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Host Graphics Function

- GDDM OS/2 Link 1.0 style function
- Supports the following functions
 - ▶ Multiple mixed alphanumeric & graphic host sessions
 - ▶ Use of print & plot facilities
 - ▶ Downloading of picture files using PIF files
 - ▶ Windows clipboard support
 - ▶ GDDM User Control Functions

Host Graphics Function

- GDDM Version 2 release 3 or higher for the following systems:
 - ▶ MVS, VSE, VM/SP, VM/XA SP
- DOES NOT SUPPORT
 - ▶ Home3270 or CUT Mode
 - ▶ IMS/VS & the pseudo-conversational mode in CICS/VS

Host Graphics Function

- ▶ Vector symbol sector image symbol set
- ▶ Double-dotted line or long dashed line
- Graphics Setup
 - ▶ Enable host graphics = YES

Print Enhancements

- Printer Control dialog box is added
- PDT/PDF Support

File Transfer Enhancement

- TRANSFER.COM
 - ▶ Invoked from windows menu
 - ▶ Multiple session transfer
 - ▶ IDP utility (Windows application)
 - ▶ Supports the changing of file transfer packet size
- Translation Table Setup

EHELLAPI/DDE

- EHELLAPI Enhancement
 - ▶ 8 Functions (120-127) added for structured field services
- DDE Enhancement
 - ▶ 17 functions added for EHELLAPI equivalency
 - ▶ DDE "server" feature
- API Setting
 - ▶ Enable/Disable
 - ▶ Individual setting per session

Dos Mode EHELLAPI

- ▶ DOS EHELLAPI programs for PC/3270 (DOS) can interact with 3270 sessions
 - 386 Enhanced Mode only
 - DOES NOT Support
 - Function 17 - Storage Manager
 - Trace Facility
 - CONPHYS
 - DOS Box file transfer
 - Sample SEND/RECEIVE API program \SDK\SAMPLES\DOSXFER

DOS Mode EHLLAPI

- Setup
 - ▶ Must create a PIF file for COMMAND.COM & setup EXECUTION option as follows:
 - Execution: Background
 - From FILE on the PC/3270 menu bar
 1. Select API Setting
 2. DOS MODE API: ON

INSTALL.EXE

- Normal
 - ▶ New or Co-existing with PC/3270 V2.0
 - Modify & backup existing WIN.INI & SYSTEM.INI
 - Adds ICONS to Program Group
 - Setup, Batch, Workstation
 - ▶ Switching between V2 and V3
 - Cannot run simultaneously
 - Restart Windows
 - Edit System.INI
 - Restore System.INI

INSTALL.EXE

- Migration from PC/3270 V2.0
 - ▶ Select the drive & directory of PC/3270 V2.0
 - ▶ Modify & backup existing WIN.INI & SYSTEM.INI
 - Standard Mode
 - Modifies & backs up existing CONFIG.SYS

INSTALL.EXE

- ▶ Respond "YES" to the migration message
- ▶ CNF Files become Batch Icons
- ▶ PC/3270 V2 user files are updated & copied to /PRIVATE directory

Sharing Files

- ▶ Administrative Install Option
 - Install /A
 - Specify Network Drive
- ▶ Install from a Network Server
 - Install /N
 - Creates Private files

What the Install Program Does?

- Standard & Enhanced Mode
 - ▶ Modifies WIN.INI
- Enhanced Mode
 - ▶ Modifications to SYSTEM.INI file
 - VPollHeapSize=XX ← optional
 - VPOLL.D.386 ← optional
 - VSLAND.386 ← LAN via 802.2
 - VVLAND.386 ← LAN via V3 GW
 - VDOSHLLD.386 ← DOS-BOX HLLAPI

What the Install Program Does?

- ▶ Creates PCSWIN.BAT & PCSTSR.BAT
 - PCSAEA.COM ← DOS TSR (Home3270)
 - PCSASYNC.EXE ← DOS TSR(ASYNC/IIN)
- Standard Mode
 - ▶ Creates PCSWIN.BAT & PCSTSR.BAT
 - PCSTSR.BAT loads the following DOS TSR programs
 - PCSPOLL.EXE /B=xx
 - PCSAEA.COM ← DOS TSR (Home3270)
 - PCSASYNC.EXE ← DOS TSR (ASYNC/IIN)
 - PCSSDLC.EXE ← SDLC
 - PCSLAN.EXE ← LAN via 802.2
 - PCSVLAN.EXE ← LAN via V3 GW

Estimated Buffer Size

MODULES	ENHANCED	STANDARD
PCSAEA.COM	+1	+1
PCSASYNC.EXE	+15	+15
PCSSDLC.EXE		+15
SDLC (ENH)	+15	
PCSLAN.EXE		+8
VSLAND.386	+8	
PCSVLAN.EXE		+6
VVLAND.386	+6	

Estimated Memory Requirements

- **Enhanced Mode**

- ▶ **Installed Memory**

- 4MB
- 1MB for Graphics display
- 1MB for Graphics print support
- 1MB for DOS VM HLLAPI

- ▶ **Conventional Memory Used**

- VPollheapsize
- PCSAEA.COM → 8KB
- PCSASYNC.EXE → 22KB

Estimated Memory Requirements

- **Standard Mode**

- ▶ **Installed Memory**

- 2MB
- 1MB for graphics display
- 1MB for graphics print support

- ▶ **Conventional Memory**

- PCSPOLL.EXE
- PCSAEA.COM → 8KB
- PCSASYNC.EXE → 22KB
- PCSSDLC.EXE → 13KB
- PCSSDLC.EXE → 1KB
- PCSSLAN.EXE → 0.6KB

Program Icons

- **Workstation**

- ▶ **PCSWS.EXE** - Creates a single host session

- *.WS file - profile characterizing the host session

- **Batch**

- ▶ **PCSBAT.EXE** - Allows execution of more than one host session (PCSWS.EXE)

Program Icons

- /R parameter - Starts the host sessions (PCSWS.EXE) automatically

- **Setup**

- ▶ **PCSSETUP.EXE** - Updates system settings when attachment types are changed

- SYSTEM.INI
- PCSTSR.BAT

LAN Parameters

- **Local SAP**
 - ▶ Default is s'04
 - ▶ Source SAP of PC/3270
 - ▶ Range of values x'04 thru x'EC
- **Receive Buffer Count**
 - ▶ Number of buffers required to receive 2 m
 - ▶ Receive buffer size of 280 bytes

LAN Parameters

- **Link Station Count**
 - ▶ Number of links to be supported
 - ▶ Based on the number of host gateways
 - ▶ First session should open the adapter with

Coax Considerations

- **Standard Mode**
 - ▶ DOS Box not supported
- **CUT Mode**
 - ▶ Functions not supported
 - File transfer
 - API (DDE, EHLLAPI, SRPI)
 - Host Graphics
 - Edit functions except "COPY"

Coax Considerations

- ▶ **Limitations**
 - US English
 - Port 0 Utility
- **OS/2 2.0 Windows Box**
 - ▶ Concurrent operation with other applications in an OS/2 DOS & Windows VM
 - OS/2 recommended SETTINGS
 - Set OS/2 IDLE_SENSITIVITY = 100
 - Set OS/2 IDLE_SECONDS = 60

Coax Considerations

- 3174 Configuration support B or higher, recommended SETTINGS
- Q126 digit 2 = 1 (changed coaxed TIMEOUT from 50 to 100 milliseconds)
- Q125 digit 4 = 1 (command chaining OFF)
- ▶ Host-addressable printing (HAP) not supported for Coax and SDLC attachments

Configuring PC/3270 under OS/2 2.0

- Seamless Window Configuration
 - ▶ Setting the attributes of the PC/3270 Windows Object
 1. Create a new object
 2. Select Program Tab
 3. Enter a path & File name of c:\pcswin\pcsws.exe (for a single session) or c:\pcswin\pcsbat.exe (for batch file execution)
 4. Enter working directory of c:\pcswin
 5. Select Session Tab
 6. Select WIN-OS/2 window

Configuring PC/3270 under OS/2 2.0

7. Select Separate session
8. Select WIN-OS/2 settings
9. Set COM_HOLD = ON
10. Set IDLE_SENSIVITY = 100
11. Set IDLE_SECONDS = 60
12. Set KBD_ALTHOME_BYPASS=ON (so PA2 will work)
13. Set DOS_SHELL to c:\os2\mdos\command.com c:\os2\msdos /p /c c:\pcswin\pcswino.bat
14. Select SAVE
15. Select Window Tab

Configuring PC/3270 under OS/2 2.0

16. Select minimize windows to desktop
17. Select display existing window
18. Select General Tab
19. Enter a title of the OBJECT & select an ICON
20. Close the settings window
21. Create PCSWINO.BAT

Configuring PC/3270 under OS/2 2.0

● PCSWINO.BAT

```
@echo off
if exist c:\pcswin\pcswin.bat goto tsr
winos2.com c:\pcswin\pcsws.exe c:\pcswin\private\
example.bch
goto end
tsr
c:\pcswin\pcswin.bat c:\pcswin\pcsws.exe c:\pcswin\
private\example.ws
c:\pcswin\pcswin.bat c:\pcswin\private\example.bch
end
```