IBM 2074 Model 003
Console Support Controller

Introduction Class Foils
for 2074 code version 1.13

April 27, 2004

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IBM 2074 Introduction

- Overview
- Function
  - Protocols
  - Software Internals
  - Schematic
- Hardware
  - Options
- Comparison
- Software
- Limitations
- Operation
  - Structure
- Before configuring
- Configurator
- LAN wisdom
- Mfg test
- Plugging Rules
- Service
  - Overview
  - RAS
  - Recovery
  - Hardware
  - Software
  - Configuration

It is also on the 2074 Load CD in the \PRESENT subdirectory. This file will be called CLASS.PDF

IBM 2074 Model 3 Overview

- Reason
  - For S/390 and zSeries Consoles (green screens)
    - OS/390, z/OS. z/OS.e, MVS, TPF, VSE, z/VM
  - For loading z/VM on Hosts without a Tape Drive

  - Replaces
    - IBM 3174 Non-SNA control units
    - IBM 2074 Model 1s
    - IBM 2074 Model 2s
    - z/VM Integrated 3270 Console support
    - z/OS Integrated Console support

- This product addresses Non-SNA 3174's
  - There are other choices for SNA and TCP/IP 3270 sessions

IBM 2074 Model 3 Function

- Function
  - New
    - 96 sessions maximum
    - Rackable Tower
    - MTRJ ESCON connector
    - OMA/2 emulation (new for the Model 002)
  - Gone (compared to a 3174)
    - Parallel Channel / Bisync (in)
    - Coax
    - CUT / ANR
    - 3270 ASCII subsystem

IBM 2074 Protocols

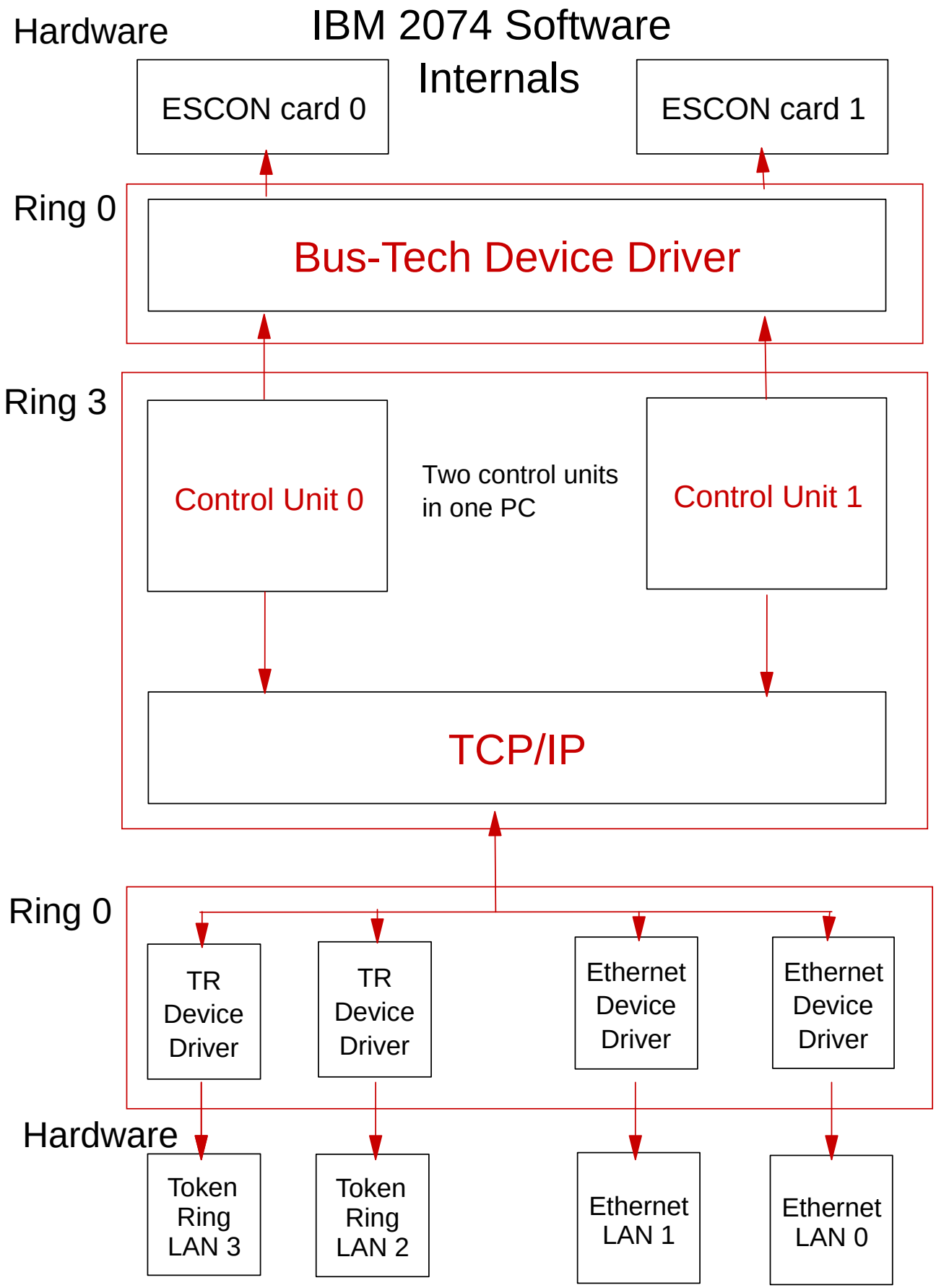
- Protocol converter

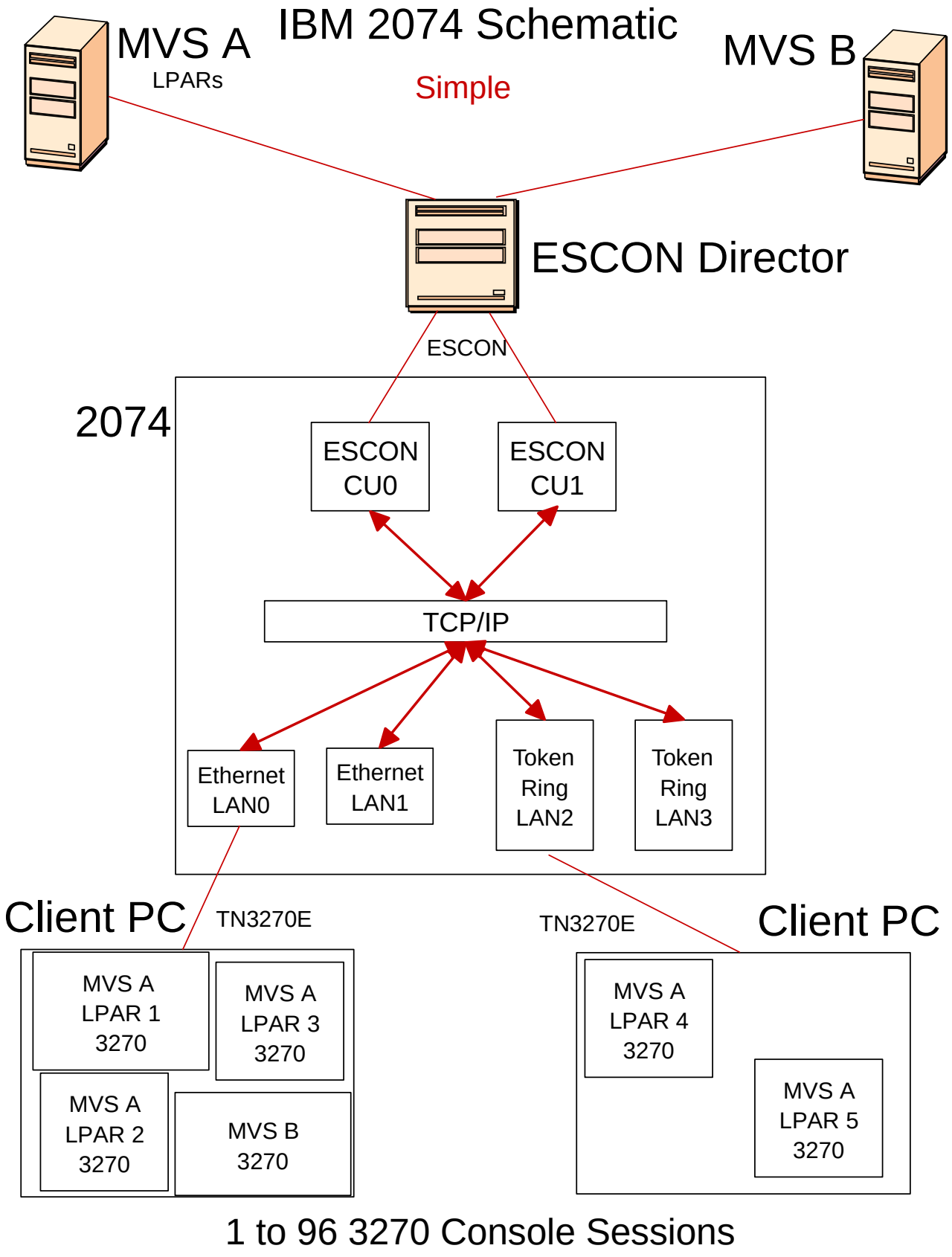
	Input	Output
H/W	ESCON	Token Ring Ethernet
S/W	Non-SNA DFT	TN3270E 3270 Session

To the Host we are an ESCON attached non-SNA DFT control unit. We emulate a 3174. **Genned as a normal 3174.**

To the client, we are a **TCP/IP Host**

The 2074 is a delivery vehicle. It doesn't create or validate the data stream.

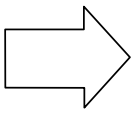

Hardware
IBM 2074 Software Internals
ESCON card 0
ESCON card 1
Ring 0
Bus-Tech Device Driver
Ring 3
Control Unit 0
Two control units in one PC
Control Unit 1
TCP/IP
Ring 0
TR Device Driver
TR Device Driver
Ethernet Device Driver
Ethernet Device Driver
Hardware
Token Ring LAN 3
Token Ring LAN 2
Ethernet LAN 1
Ethernet LAN 0


IBM 2074 Schematic
Simple
MVS A
LPARs
MVS B
ESCON Director
ESCON
2074
ESCON CU0
ESCON CU1
TCP/IP
Ethernet LAN0
Ethernet LAN1
Token Ring LAN2
Token Ring LAN3
Client PC
TN3270E
MVS A LPAR 1 3270
MVS A LPAR 3 3270
MVS A LPAR 2 3270
MVS B 3270
TN3270E
Client PC
MVS A LPAR 4 3270
MVS A LPAR 5 3270
1 to 96 3270 Console Sessions

IBM 2074 Model 3 Hardware

- Hardware
  - Complete IBM hardware solution
  - Host attachment
    - Direct ESCON
    - ESCON Director
    - FICON Bridge attachment
  - Includes 4 NICS, 2 Token Ring, 2 Ethernet
    - Fixed configuration
    - Two LAN adapters can't be on the same subnet
  - Floor standing Tower which is "rackable"
    - 19" Rack mount
    - 5U height (Model 1 & 2 was 3U)

Model 1 & 2



Model 3

  - Each 2074 includes
    - Integrated ESCON adapter with MTRJ connector
    - 2 Token Ring
    - 2 Ethernet
    - Country power cords
    - 2 Power extension cords
  - Options
    - Rack mount kit (Bezel,cover,rails,labels)
    - Second ESCON adapter (Field upgradeable)
    - US Space saver keyboard with Trackpoint
    - Northern, Japan, and Southern hemisphere monitor

2074 Related Options

- 19" Rack
  - NetBAY25 Standard rack, IBM pn 9306250
    - 22U high rack
  - NetBAY42 Enterprise rack, IBM pn 930842S
    - 42U high rack of stronger construction than standard 42U rack
  - NetBAY42 Standard rack, IBM pn 9306420
    - 42U high rack
- Rack features
  - Power Distribution Unit (PDU) (2 needed)
    - Fancy name for an outlet strip
    - 115 Volt PDU, IBM pn 94G6666, 2 required
    - 240 Volt PDU, IBM pn 94G7450, 2 Required
  - Blank filler plates, IBM pn 94G6670, kit contains:
    - Qty 2, 1U plates, Qty 1, 3U plate and Qty 1, 5U plate
- Additional rack information and a rack configurator can be found at the following WEB address:
  http://www.pc.ibm.com/ww/eserver/xseries/rack.html
  (note: the 2074-003 is the same size as an IBM xSeries 235 or 8671)
- NetBAY Console Switch (KVM) Allows the use of a single display and keyboard to control multiple 2074 units
  - IBM Console Switch (1x4 port) IBM pn 09N4290
  - IBM Console Switch (2x8 port) IBM pn 09N4291
  - NetBAY Cable set, (Siamese cable for Mouse, Kbd, & Display)
    - 7 foot (locking) IBM pn 09N4293
      (order one set per 2074)
  - 12 foot (non-locking)IBM pn 94G7447
    - (Order one set per 2074)
      Note: The use of a KVM can complicate service issues

Comparison	3174	2074-003
Usage	Many uses including: S/390 Console, Local & Remote, T/R & Ethernet LAN, ASCII Host, AS/400, APPN networks, ISDN, etc	Primary use in replacement for 3174 S/390 IPL console support only
Channel Attach	Both Parallel and ESCON or FICON Bridge	ESCON or FICON Bridge
ESCON Director	SWITCH , not shared	SWITCH shared
LPAR Support	One 3174 minimum per LPAR or System Image	One 2074 minimum for up to 96 LPARs or System Images (EMIF)
System Attach	Single System	2 ESCON cards (48 sessions each). 1 or 2 systems attach
Protocol Support	SNA, Non-SNA, DFT,CUT	Non-SNA, DFT
Operating System	OS/390, VM, TPF, VSE, Stand alone utilities	OS/390, VM, TPF, VSE, Stand alone utilities
Console H/W	3278 (CUT), PCs running PCOM (DFT) or equivalent software	PCs running PCOM (TN3270E)
Console Attach	COAX	LAN - T/R or Ethernet
Printer Support	COAX directly attached into 3174	Printer attached to PC on LAN running PCOM.
STK SILO Support	YES - COAX andTCP/IP attached	None

IBM 2074 Software

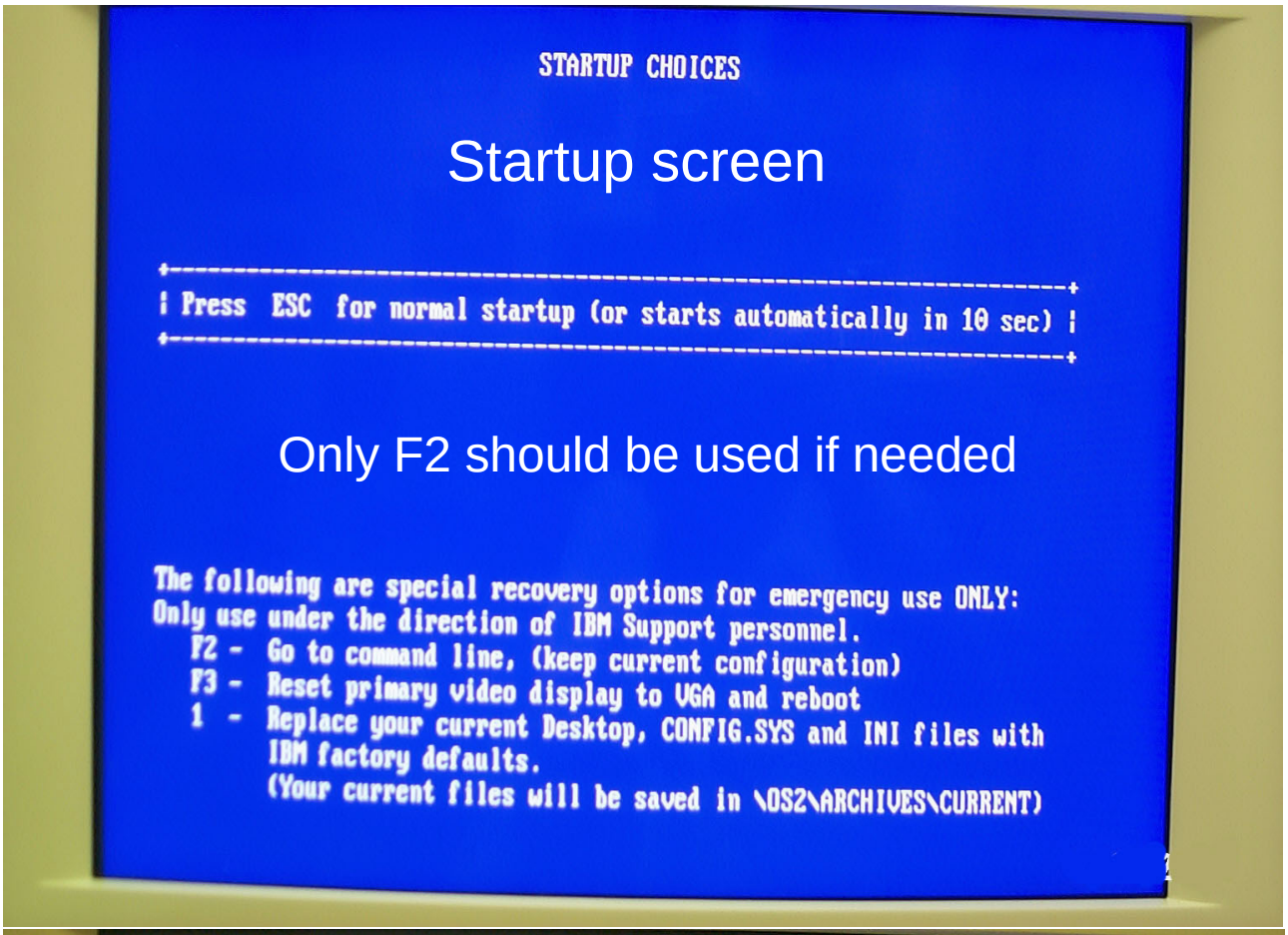
- Software
  - Bus-Tech PBSA ESCON Device Driver
    - BTIDD.SYS
  - LSI 1030 SCSI Device Driver
    - LSIMPT.ADD
  - Broadcom BCM5703 Ethernet Device Driver
    - B57.ADD
  - Control Unit emulation originated with IBM 7060
    - ESCON, Non-SNA DFT only
  - PCOM e-Network
    - TN3270E Emulator for sessions on the 2074
    - Limited to 2 on 2074. Only for debugging
  - Contains IBM LIC
  - Clients can be NLS

IBM 2074 Software

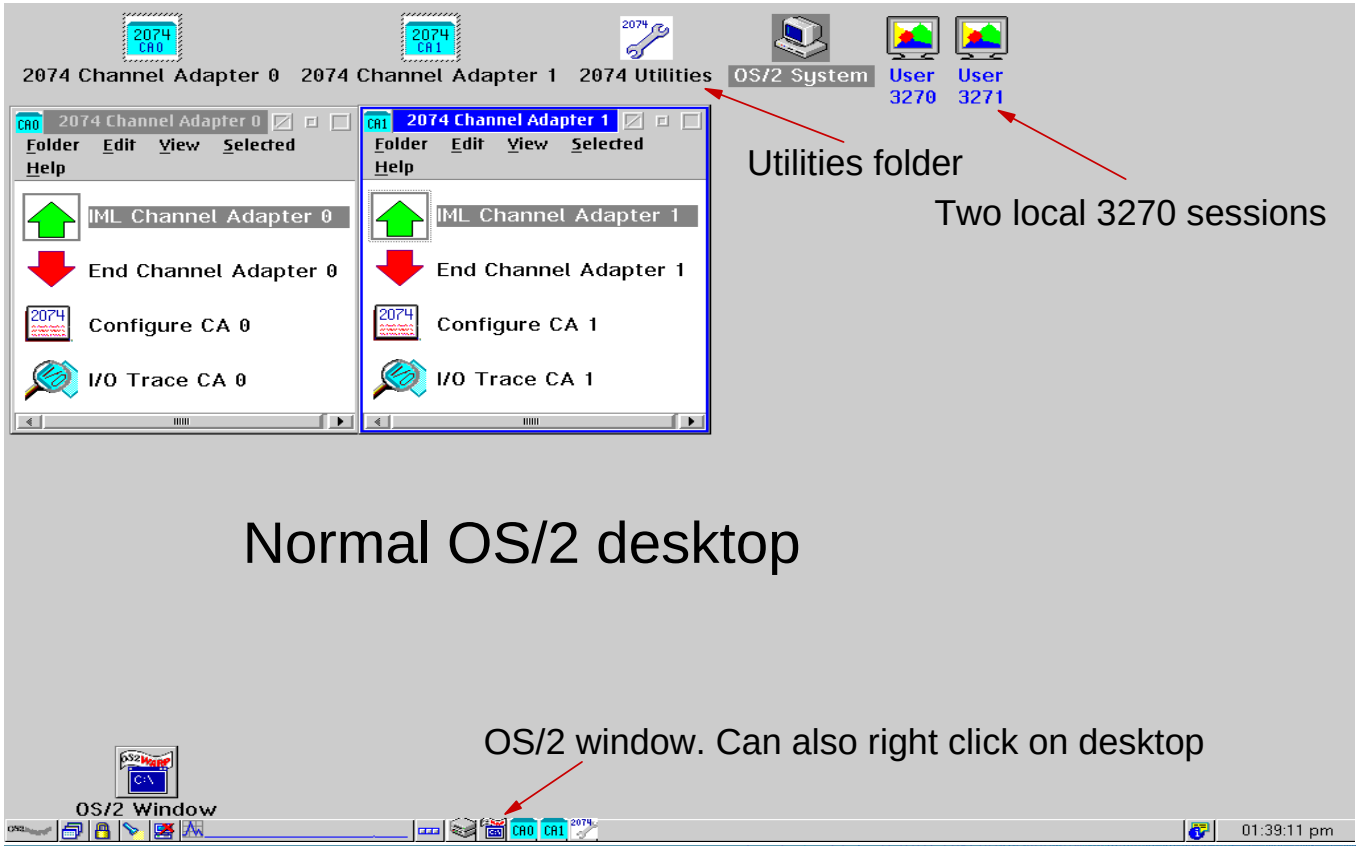
- Software continued
  - OS/2
    - United States English Version
    - Non-US code pages available
    - TCO (Total Content Ownership)
  - Dumps
    - D: drive reserved for dumps
    - TRAPDUMP D:,R0
    - Two are saved, First and Last
      First one is copied to G:\SADUMP
      Last one stays on D:
  - Executable code stored on C: (1 G)
  - Swap file almost fills D: drive (2 G)
    - Precludes its use by customers
    - Coexists with a TRAPDUMP
  - Customer configurations stored on E: (2 G)
    - DEVMAPS
    - CUSTOMER.DAT
    - Partition reload doesn't destroy
  - OS/2 JFS partition on G:
    - Trap dump (G:\SADUMP)
    - Staging area for Snap Dumps
    - Partition reload doesn't destroy
  - Bootable CD for code load
    - Partitions can be reloaded in ~3 minutes
    - Disk can be restored in ~5 minutes
    - No need to FDISK, FORMAT, etc.

2074 Limitations

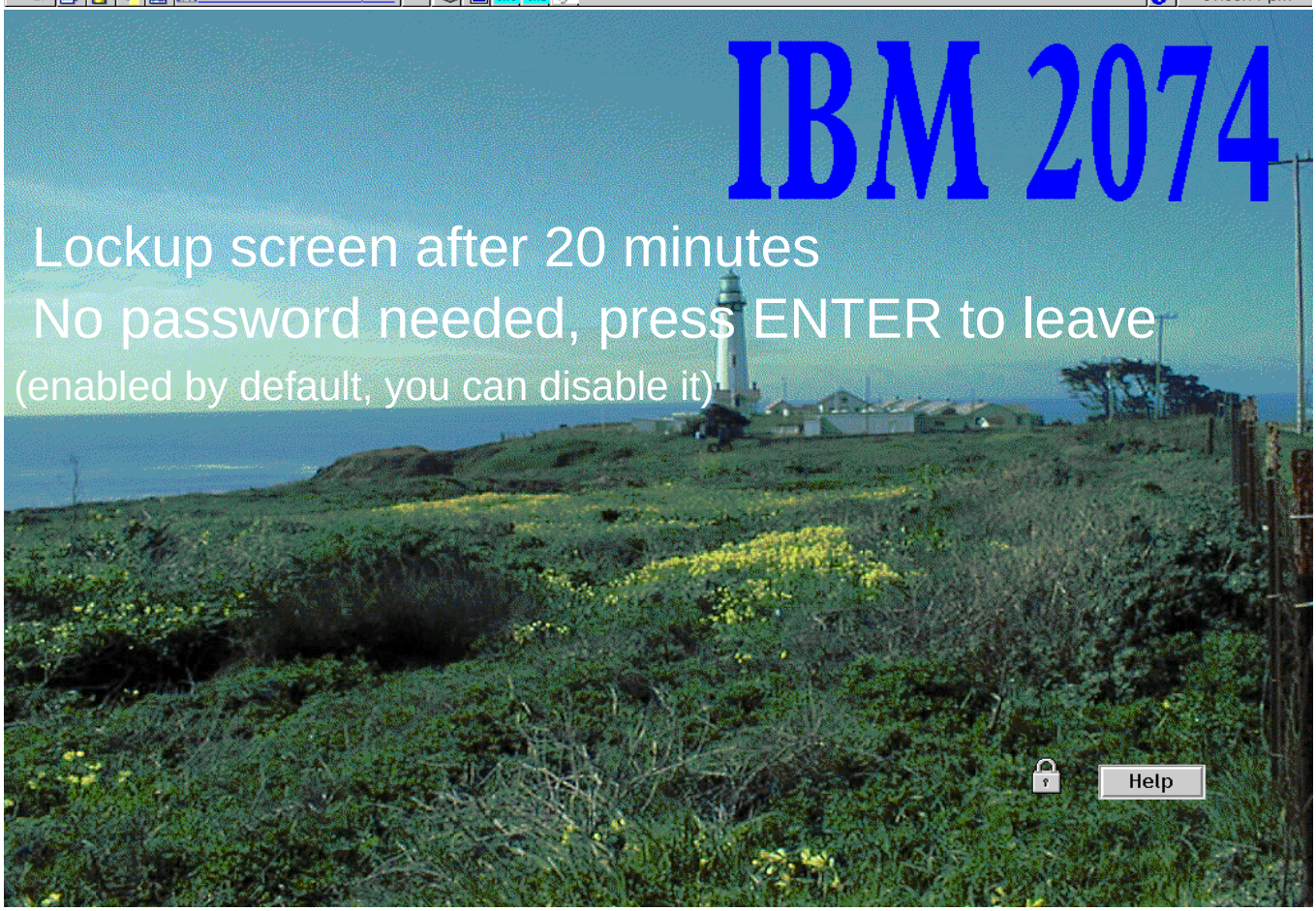
- 48 sessions per Channel Adapter
  - Model 003 Maximum 96 (48 per adapter)
  - Model 002 Maximum 64 (32 per adapter)
  - Model 001 Maximum 32 (16 per adapter)
- Only supports TN3270E clients
- Each LAN adapter that you enabled must be on a separate LAN
- No multi-path support
- Use of a KVM (Keyboard/Video/Mouse) console switch can complicate service


STARTUP CHOICES
Startup screen
+----------+
¦ Press ESC for normal startup (or starts automatically in 10 sec) ¦
+----------+
Only F2 should be used if needed
The following are special recovery options for emergency use ONLY:
Only use under the direction of IBM Support personnel.
F2 - Go to command line, (keep current configuration)
F3 - Reset primary video display to VGA and reboot
1 - Replace your current Desktop, CONFIG.SYS and INI files with
IBM factory defaults.
(Your current files will be saved in \OS2\ARCHIVES\CURRENT)


Logo while initializing
IBM 2074
Lighthouse
OS/2 fixpack level
Internal revision 14.040_UNI



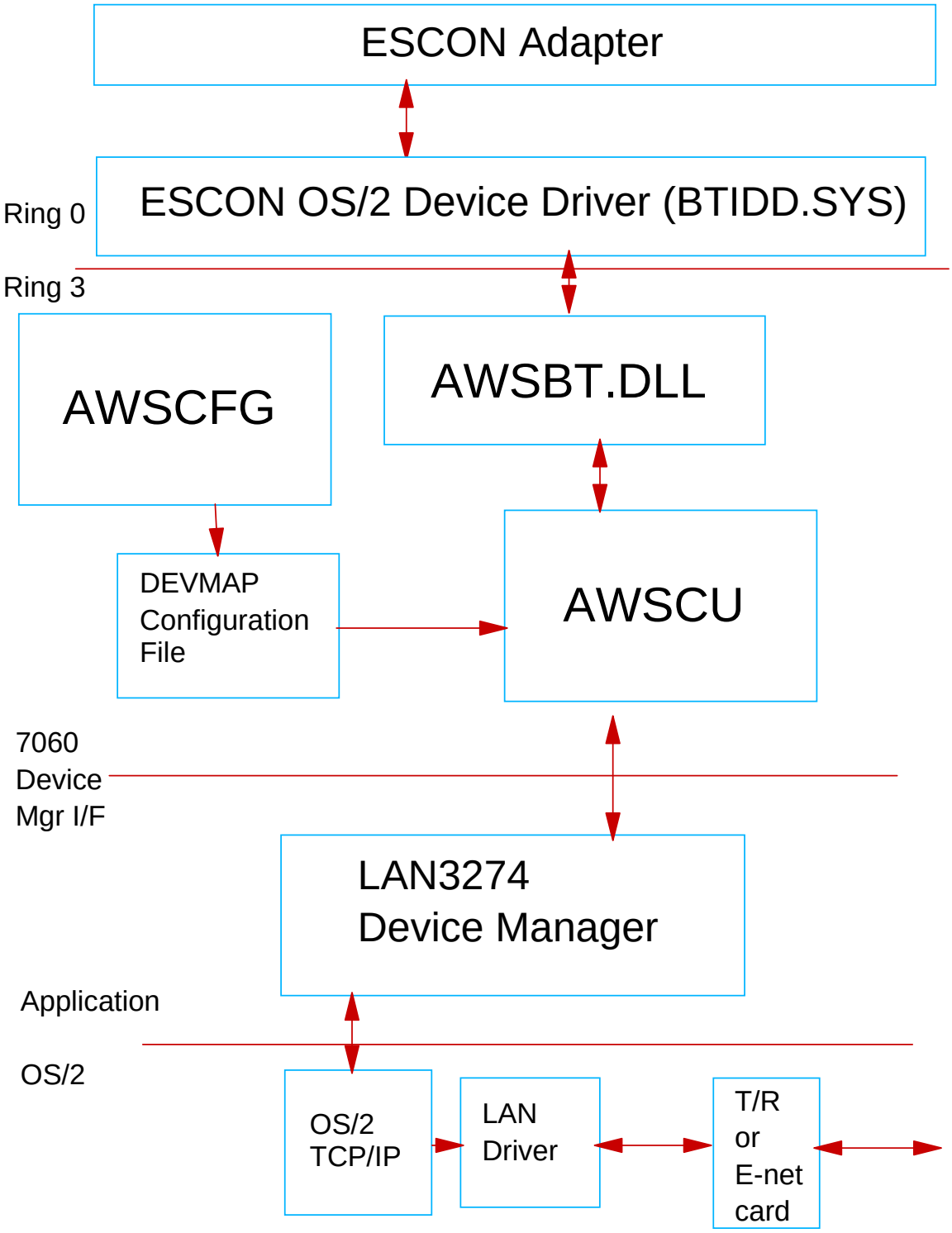
Normal OS/2 desktop



IBM 2074 Model 3 Operation

- Operation
  - The 2074 emulates a Non-SNA DFT "coax" control unit
    - Inbound Non-SNA DFT from the Host
    - Outbound TN3270E TCP/IP LAN to clients
    - Any RFC 2355 compliant client TN3270E emulator can be used
      (only use emulators with service, not "freeware")
  - Looks like 2 logical control units in 1 package
  - Outbound devices look like
    - 3278 Terminals
    - 3287 Printers
    - 3422 Tape Drive (VM only) (OMA/2 device)
  - 48 Sessions (addresses) per adapter are available
    - Two ESCON adapters allowed, 48 sessions each
    - Can be from any S/390 CPU, even LPARs
      but doesn't support multipathing
      (supports EMIF, IBM 3174s can't do that)
  - Can replace up to 96 IBM 3174s
    (If they were for LPAR consoles)
    - Duplication and cross connecting suggested
  - Clients will connect even though there is no Host
    - Clients connect to the 2074s TCP/IP
    - This is different. Presently clients connect to the Hosts TCP/IP. If Host is down, no connection.
    - Address could be boxed, varied off, etc.

IBM 2074 Structure



IBM 2074 Getting Started

- Items to have to complete the Configurator's F2 screen
  - A "printed" IOCDS Source file. HCD input isn't enough. You can disassemble the IOCDS on the SE to get a readable IOCDS Source file, if you have an available partition. All changes should be from HCD to make sure things stay in sync.
  - A list of the directors "link in" ports. You will need to use the first of the two numbers that are separated by a slash, if your director has such numbers. This is the 2074s "destination" port on the director.
  - Optionally the IP address of the clients
- Items to have to complete the Configurator's F4 screen
  - IP addresses for the 2074s LAN adapter(s)
  - Route statement information, like the Gateway address.
  - Packet size
- Summary of tasks
  - IOCP person
    - for CU and UA
  - Network person
    - for IP and Gateway addresses and ROUTE info
  - ESCON cable / director person
    - for destination port addresses
  - Operating System Programmer
    - for things like PARMLIB changes for the consoles, or for help getting a session up on this new address. Also, for LPAR numbers.

IBM 2074 New MVS Console Options

- New Option /CON
  - For z/OS, z/OS.e MVS, and OS/390 (MVS)
    - The /CON option can be specified for a device that is to be used *ONLY* as an MVS console.
    - When a client for an MVS console reconnects, in some cases it goes into '3277' mode with a 24x80 screen and no color. The console must be varied off/on from the host to restore color and screen size. Specifying /CON modifies the 2074 disconnect/reconnect operation to avoid this problem.
  - If the device is sometimes varied to be a TSO terminal or CICS client, then do not use /CON.
- New Option /DHD
  - Deferred Host Disconnect (/DHD) allows a client to disconnect and reconnect without informing the host.
  - This option is designed for use with MVS consoles. Do NOT use this option without first studying carefully to see if it is necessary!
    - If DHD is active for a device, a timer is started when the 2074 discovers the client is disconnected. Until the timer expires, any output from the host is discarded but the host is informed that the I/O was successful. If the client reconnects within the time limit, the host is sent a "CLEAR" key which will cause it to reformat the master console and continue output. Note that there is no attempt by the 2074 to buffer and retransmit any messages that were sent while the client was disconnected. If the client does not reconnect within the time limit, the host is sent "unsolicited device end/intervention required" status when timer expires.
  - DHD should ONLY be used with MVS Master Console sessions. Never with VM or TSO sessions. Never with any printer session.

    Reference LAN3274.DOC for more information.

The Logon option

- The /LGN and /NOLGN option
  - In order to indicate the 3270 client sessions are connected to the 2074, the 2074 is designed to display a "LOGON TEXT" to show the status of the session when the host system is down or the ESCON connection is disconnected or off-line. When the host system is up and running, only the host system logon screen is displayed.

    An example of the "LOGON TEXT" follows:

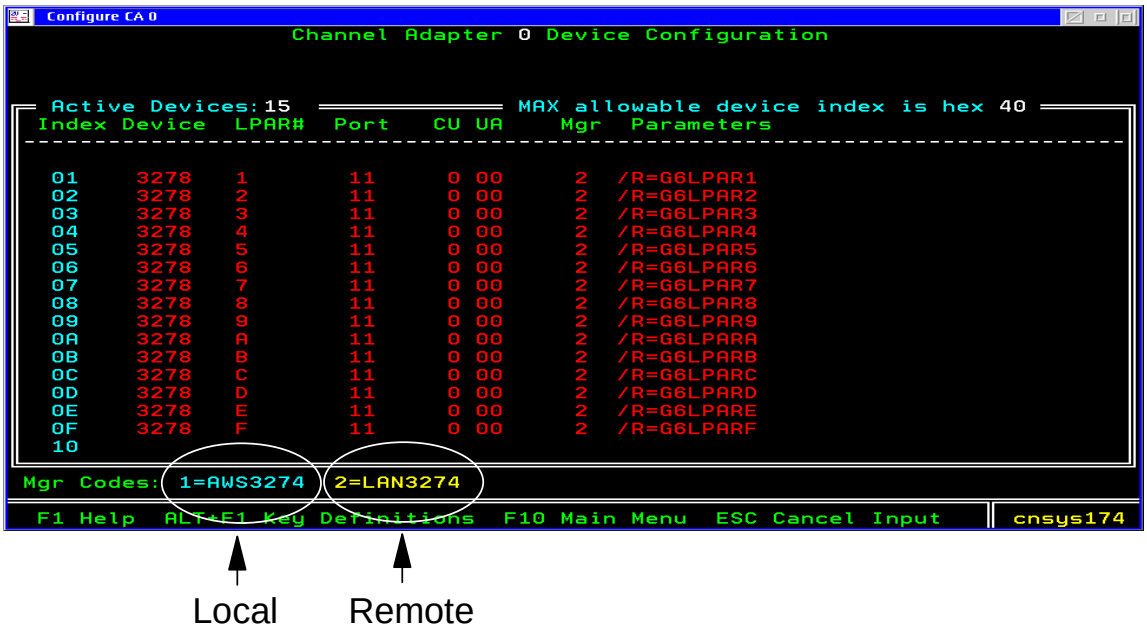
```
** 2074 Index 01 Connected to LU14-CA0 via IP Address 10.10.1.1:3270   **
**        CA=0 Index=01 LPAR=1 Port=CB CU=0 UA=00 LUname=LPAR1         **
** Type=009033 Model=001 Mfg=000 SN=0000010179 Tag=0C7 Status=InActive **
```

  - The 2074 will always clear the 3270 client session before displaying the "LOGON TEXT". Thus when the host system (z/OS or z/VM) is shutdown, the final "Disable Wait" or "Shutdown Completed" messages will be cleared by the 2074 in order to display the above "LOGON TEXT".
  - Seeing the last "Disable Wait" or "Shutdown Completed" messages is very important to system programmers when the system is having a problem. Therefore, the 2074 provides an option on the "Advanced Telnet3270" panel (the panel where the LUName is entered) to selectively display or not display the "LOGON TEXT" on an individual 3270 client session. The default is to display the "LOGON TEXT". The options are:
    - /LGN Enable the clearing of the 3270 client session and displaying the "LOGON TEXT" message when the host system is down or the ESCON connection is disconnected or off-line (This is the default).
    - /NOLGN Disables the clearing of the 3270 client session and disable the displaying of the "LOGON TEXT" message when the host system is down or the ESCON connection is disconnected or off-line.

Reference LAN3274.DOC for more information.

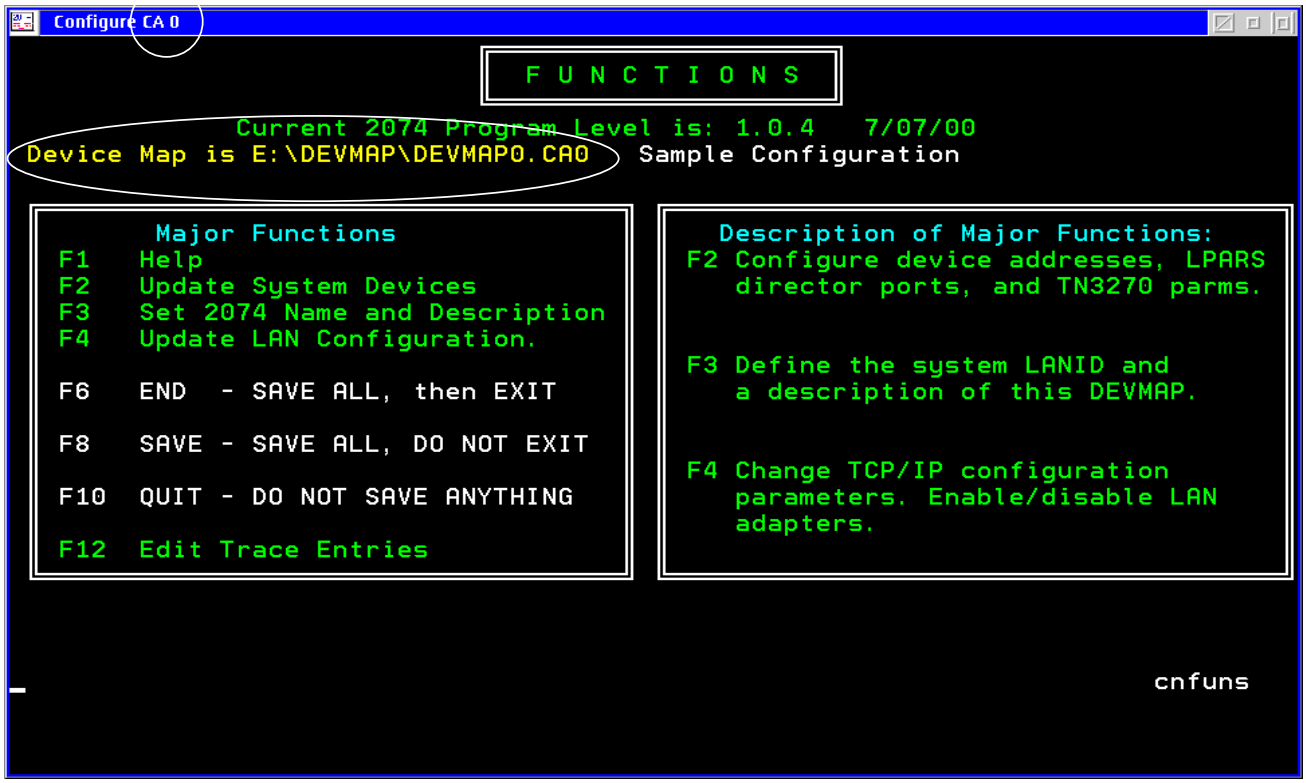
IBM 2074 Configurator

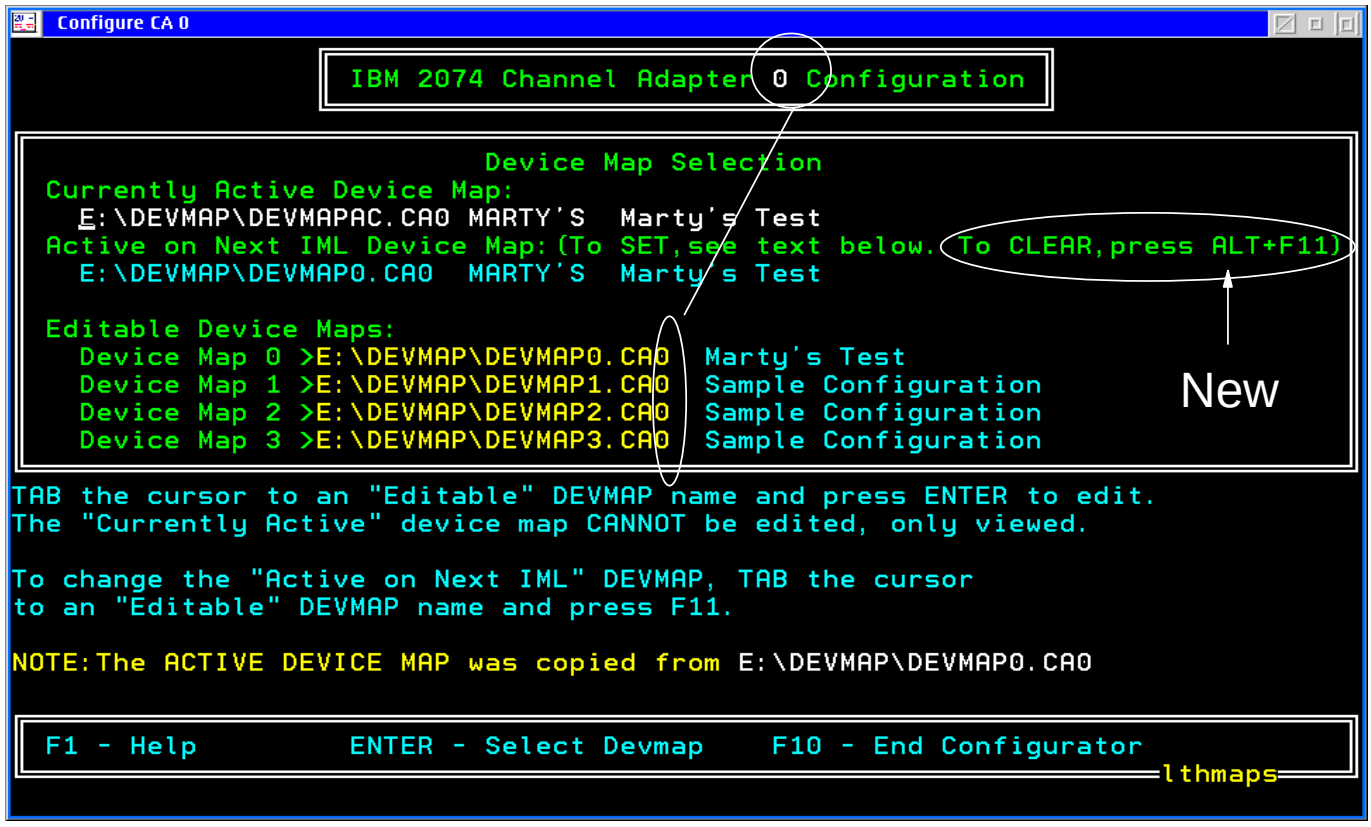
- Configurator
  - One for each ESCON adapter
    - Channel Adapter 0
    - Channel Adapter 1
  - Referred to as "DEVMAP"
    - INDEX 01 to 20 (hex) A two digit table index number for the device.
    - Device 3278 or 3287
      - 3278= TN3270E terminal session
      - 3287= Emulated 3270 printer on clients PC printer
      - 3422= OMA media support for z/VM and VM
    - LPAR# 0 = Not talking to an LPAR or channel dedicated to a single LPAR.
      - 1 to F = Resource Partition number from the IOCDS Source file.
    - Port 01 = Not talking to a director or for a pinned address
      - 02 to FF = Director Port/Link address that the S/390 channel is plugged into.
    - CU 0 to F = Almost always 0, unless CUADD=x has been explicitly coded in IOCDS
    - UA 00 to FF = UA address must match UNITADD=yy in IOCDS
    - Mgr 1 = AWS3274 (on 2074)
      - 2 = LAN3274 (out to client)
      - 3 = AWSOMA
    - Parameters
      - /R= LUName IPaddress
        To connect to this session the client must provide a matching LU name and be from this IP address (IPaddress is optional)
      - /RSP (see LAN3274.DOC for definition)
      - /RTO= (see LAN3274.DOC for definition)
      - /S or /S= (see LAN3274.DOC for definition)

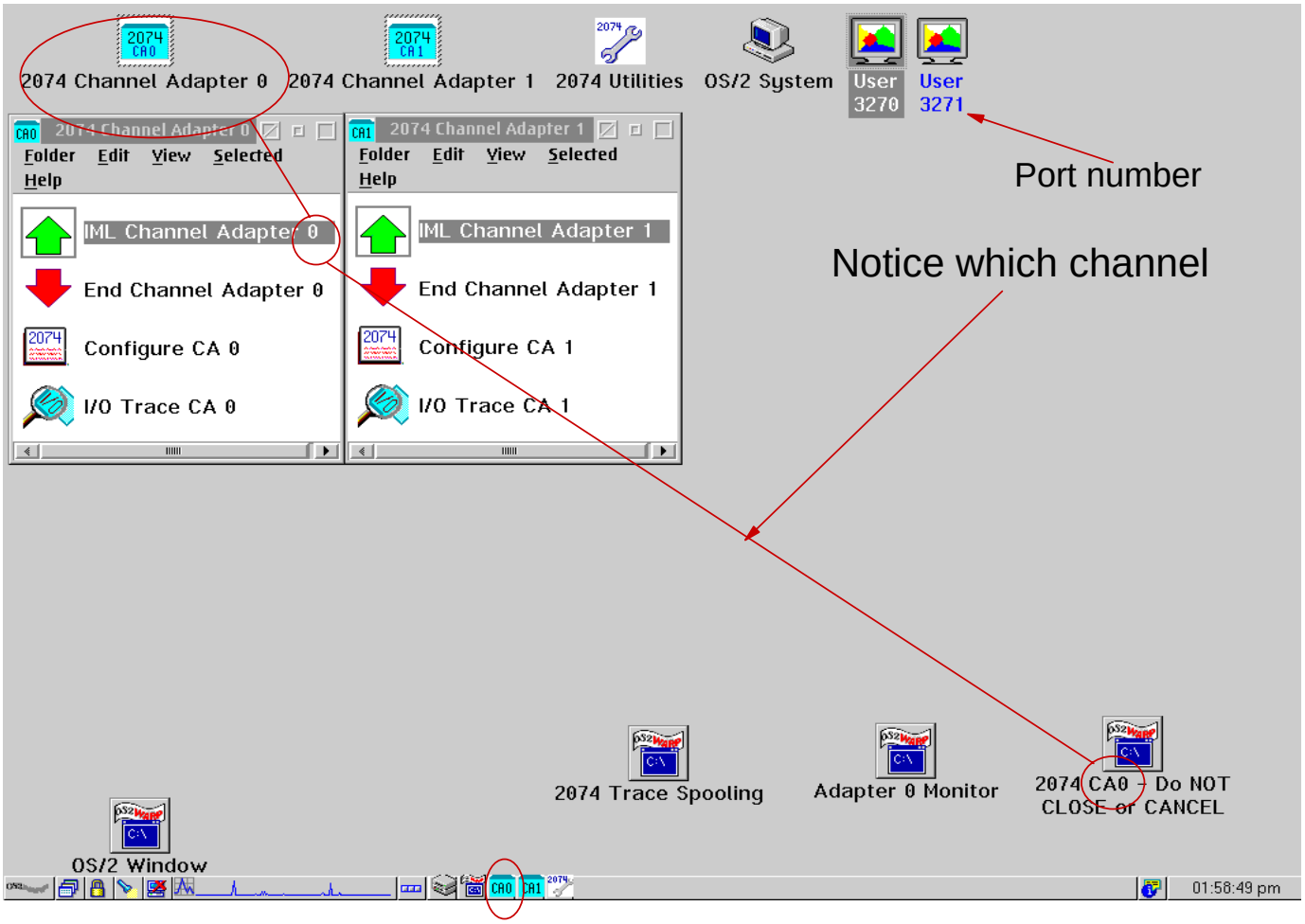


2074 Configurator

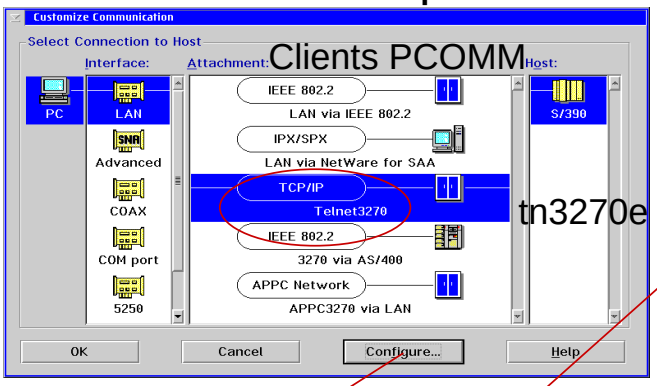
This is for Channel Adapter 0




Configure CA 0
IBM 2074 Channel Adapter 0 Configuration
Device Map Selection
Currently Active Device Map:
E:\DEVMAP\DEVMAPAC.CA0 MARTY'S Marty's Test
Active on Next IML Device Map: (To SET, see text below. To CLEAR, press ALT+F11)
E:\DEVMAP\DEVMAP0.CA0 MARTY'S Marty's Test
Editable Device Maps:
Device Map 0 >E:\DEVMAP\DEVMAP0.CA0 Marty's Test
Device Map 1 >E:\DEVMAP\DEVMAP1.CA0 Sample Configuration
Device Map 2 >E:\DEVMAP\DEVMAP2.CA0 Sample Configuration
Device Map 3 >E:\DEVMAP\DEVMAP3.CA0 Sample Configuration
New
TAB the cursor to an "Editable" DEVMAP name and press ENTER to edit.
The "Currently Active" device map CANNOT be edited, only viewed.
To change the "Active on Next IML" DEVMAP, TAB the cursor
to an "Editable" DEVMAP name and press F11.
NOTE:The ACTIVE DEVICE MAP was copied from E:\DEVMAP\DEVMAP0.CA0
F1 - Help ENTER - Select Devmap F10 - End Configurator
lthmaps

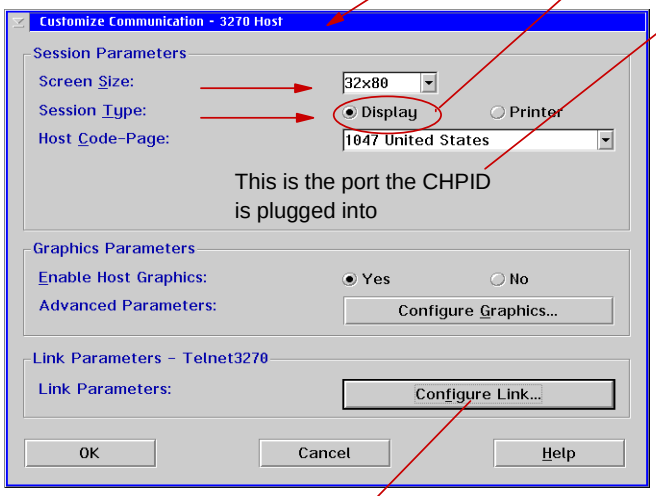

2074 Channel Adapter 0
2074 Channel Adapter 1
2074 Utilities
OS/2 System
User 3270
User 3271
Port number
Notice which channel
Folder Edit View Selected Help
IML Channel Adapter 0
End Channel Adapter 0
Configure CA 0
I/O Trace CA 0
IML Channel Adapter 1
End Channel Adapter 1
Configure CA 1
I/O Trace CA 1
2074 Trace Spooling
Adapter 0 Monitor
2074 CA0 - Do NOT CLOSE or CANCEL
OS/2 Window
01:58:49 pm

The clients three questions

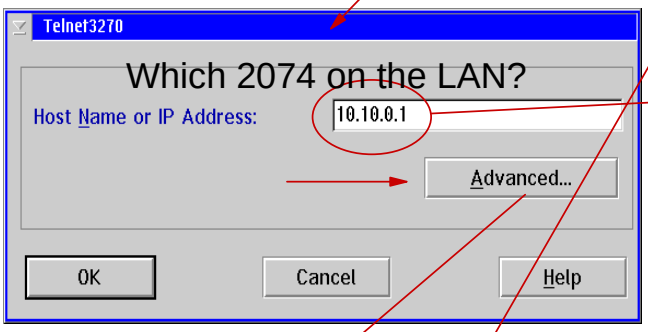


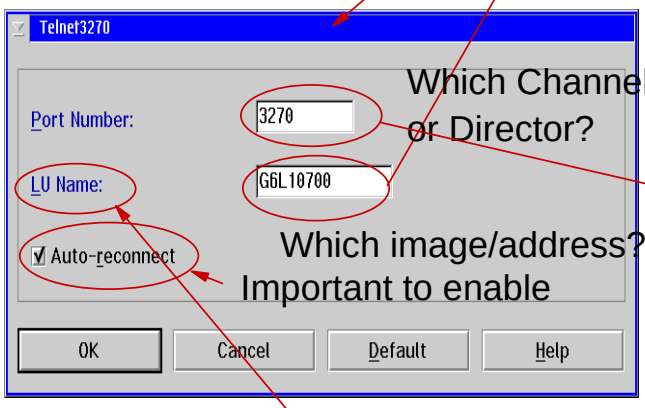
Clients PCOMM

tn3270e



This is the port the CHPID is plugged into





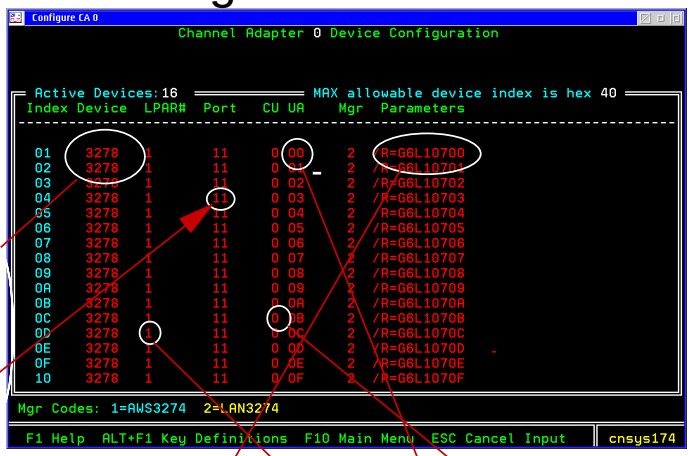
Which Channel or Director?

Which image/address?

Important to enable

LU Name is only available in tn3270e

How things relate on the 2074



IOCDS Source file

RESOURCE PARTITION=((MVS1,1),(MVS2,2))
..
CHPID PATH=(04),SHARED,PARTITION=((MVS1,MVS2)),TYPE=CNC
..
CNTLUNIT CUNUMBR=700,PATH=04,UNITADD=((00,16)),UNIT=3174
..
IODEVICE CUNUMBR=700,ADDRESS=(7F0,16),UNIT=3270,
UNITADD=00

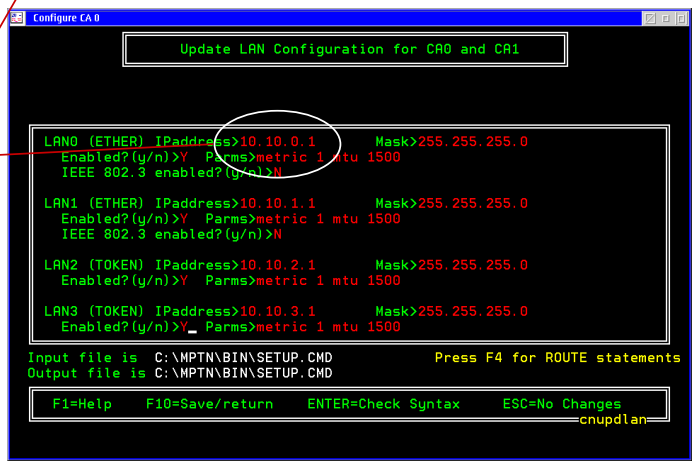
Always use 0 unless CUADD is used

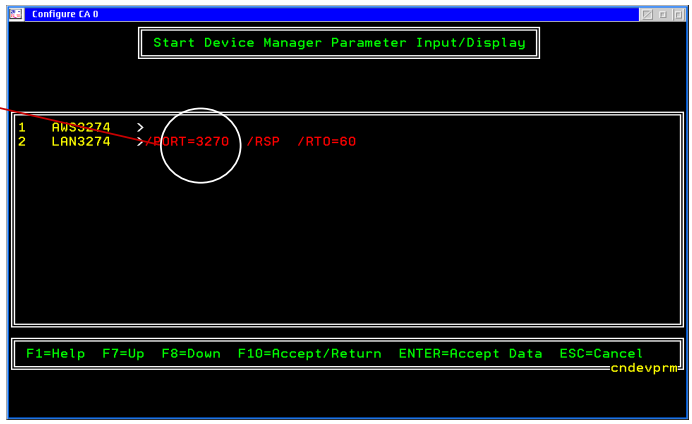
CNTLUNIT_UNITADD+IODEVICE_UNITADD=00)

HCD TSO screen

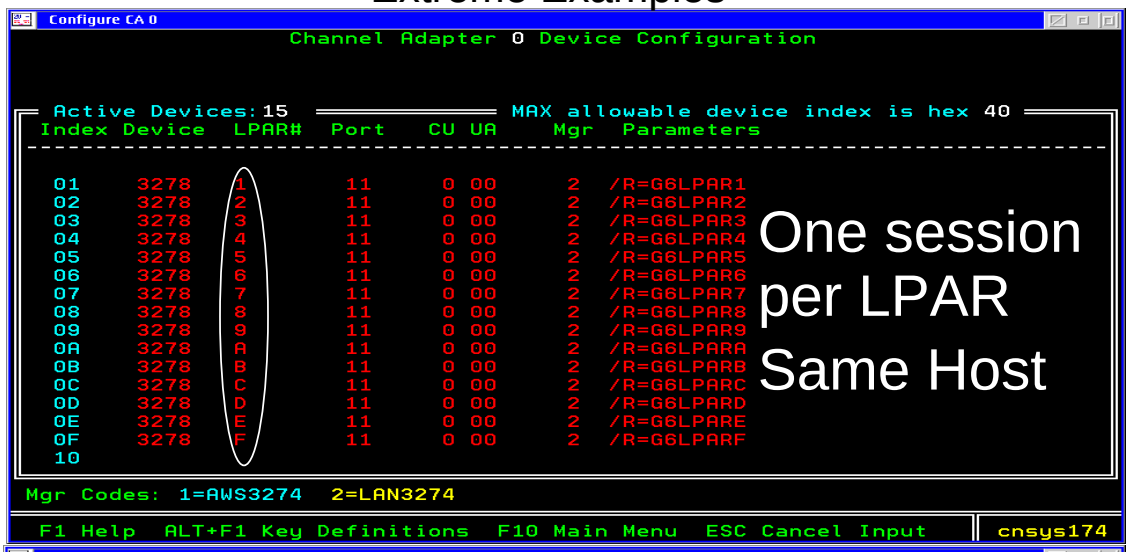
07F0 3270-X

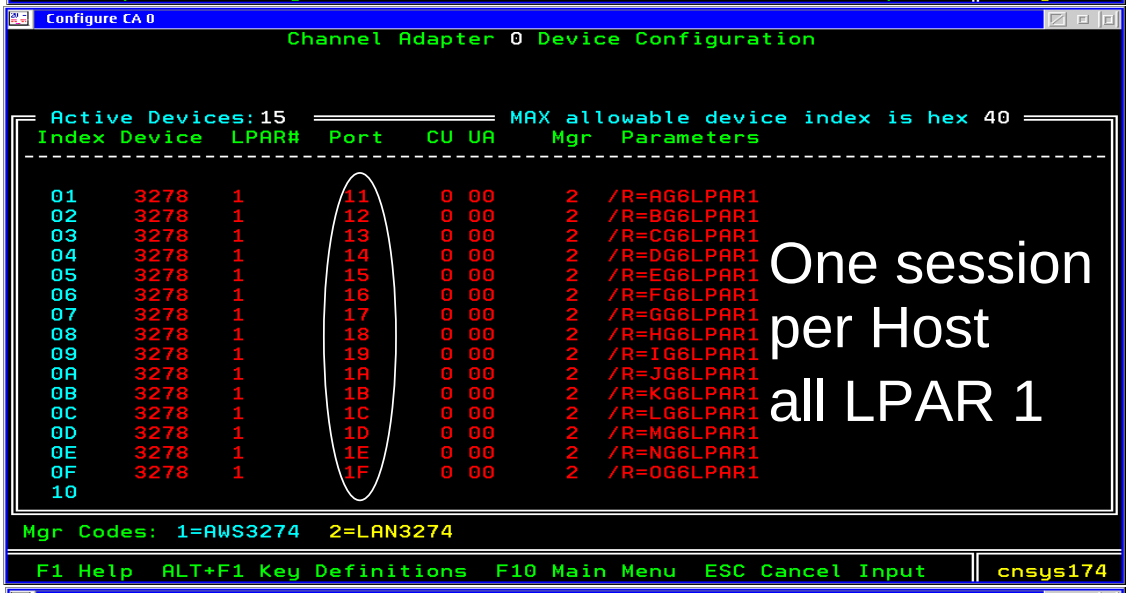
Note: HCD had F0, IOCDS has 00
also MODEL=X is needed

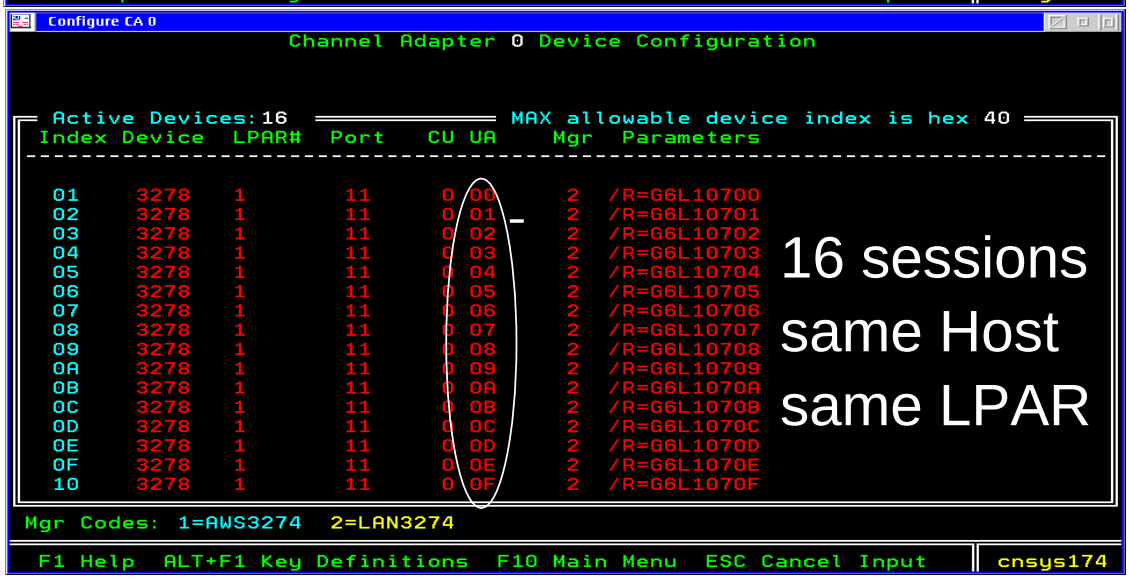




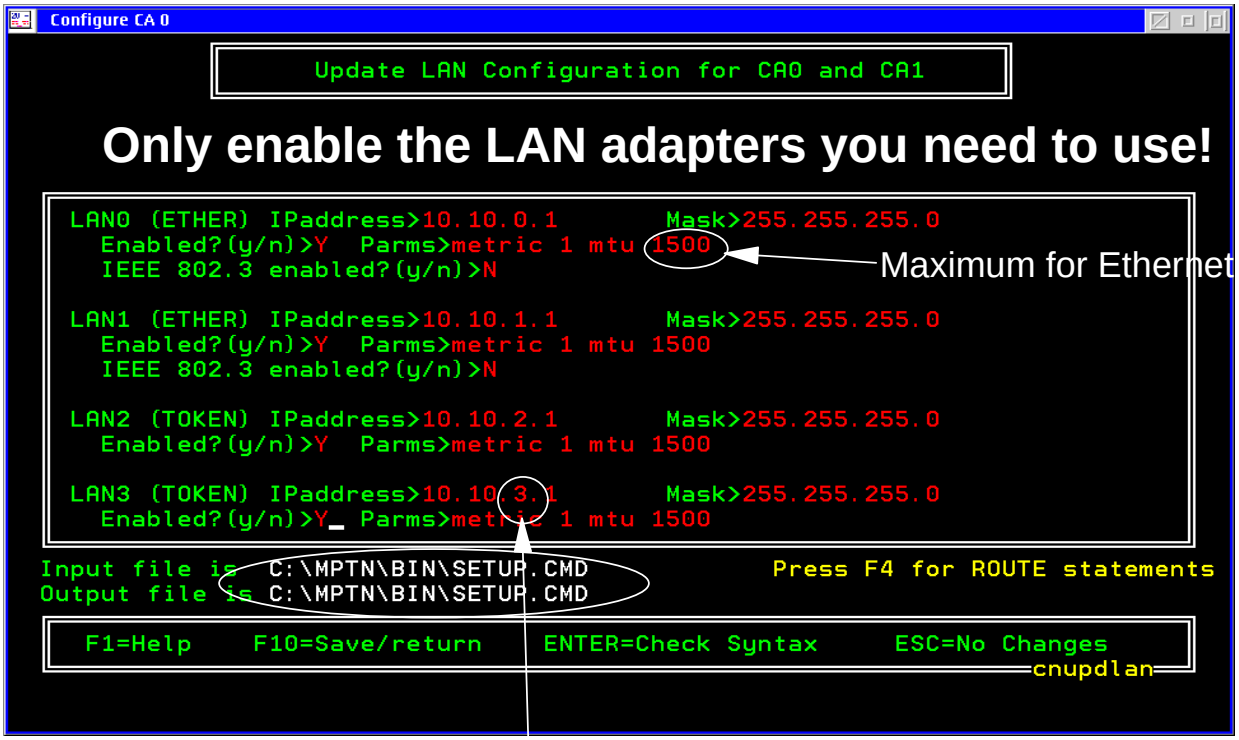
Extreme Examples





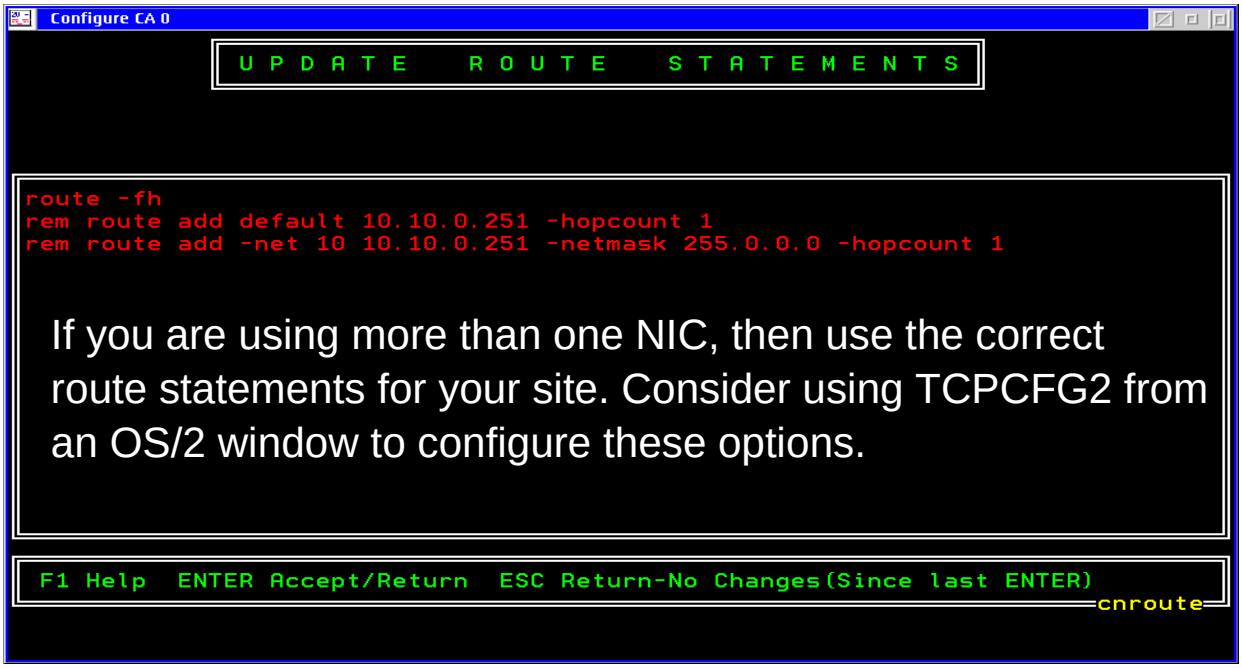


TCP/IP's SETUP.CMD
For both control units



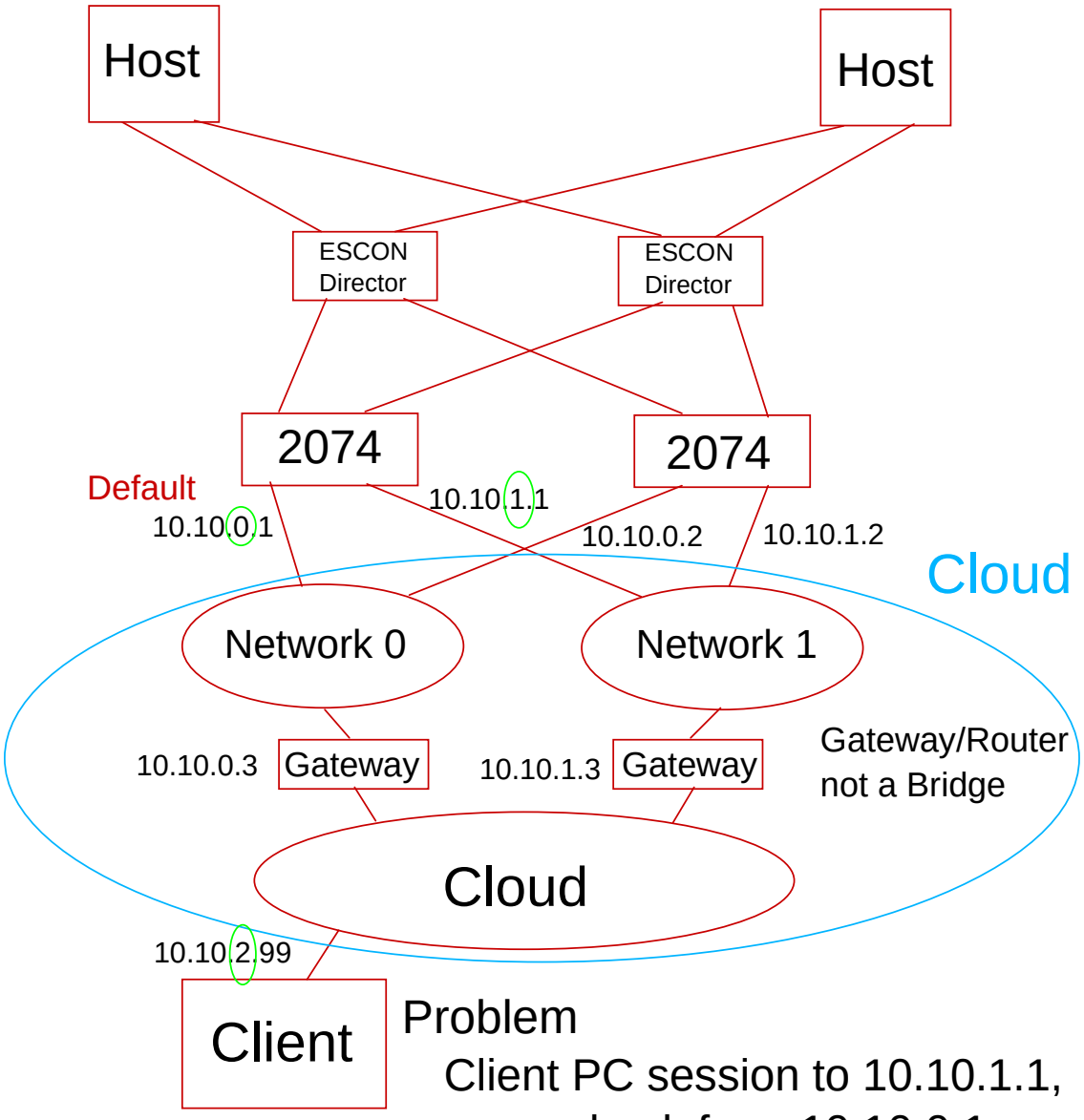
Each NIC must be on a separate LAN

OS/2 TCP/IP doesn't support load balancing or Failover. Two LAN adapters can't be on the same LAN, OS/2 wouldn't know which one to use.



IBM 2074 LAN Adapters

- Using two LAN adapters
  - All traffic for the 0 network goes out LAN0 adapter
  - All traffic for the 1 network goes out LAN1 adapter
  - Traffic for all other networks goes out default adapter

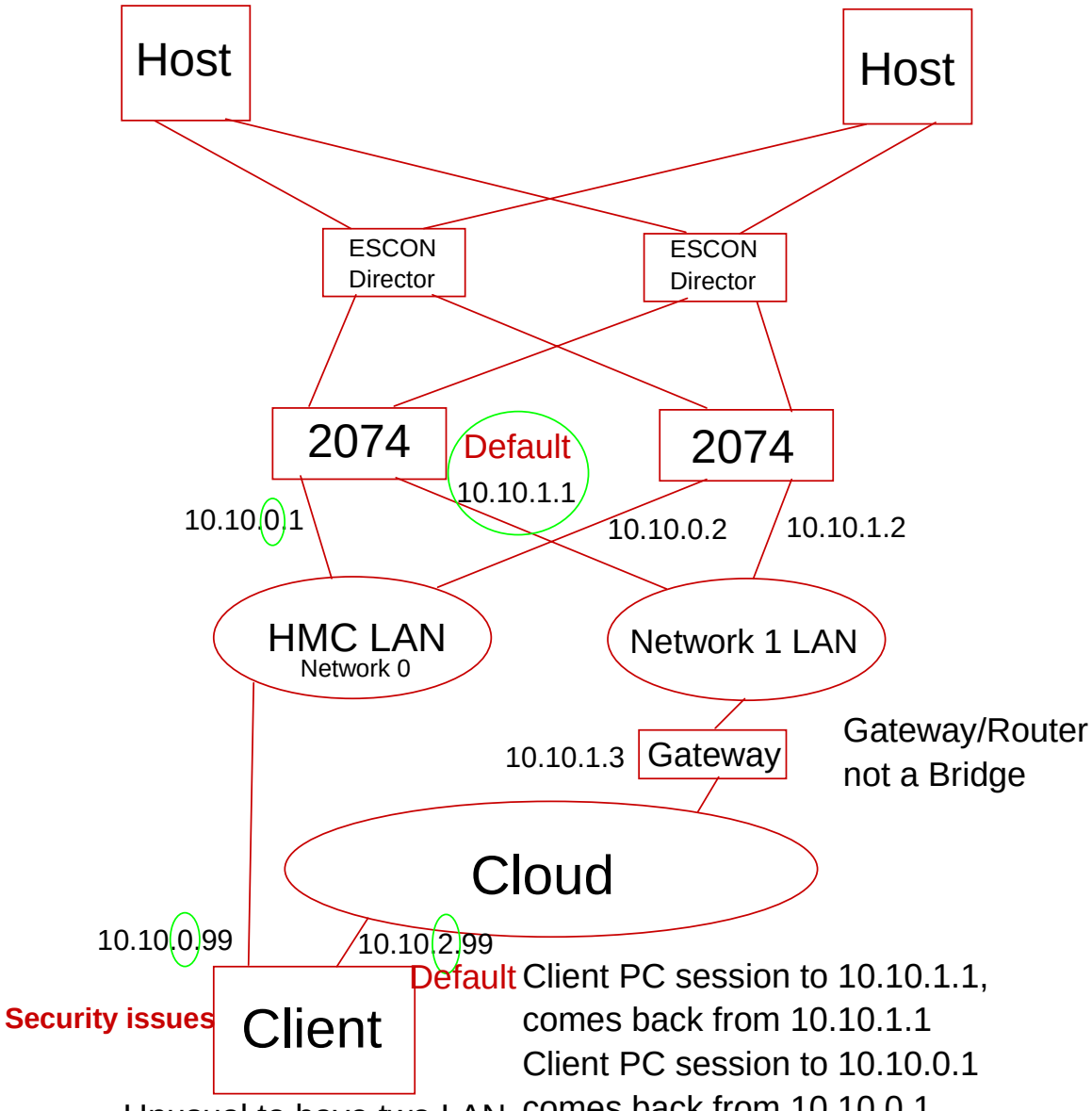


Problem

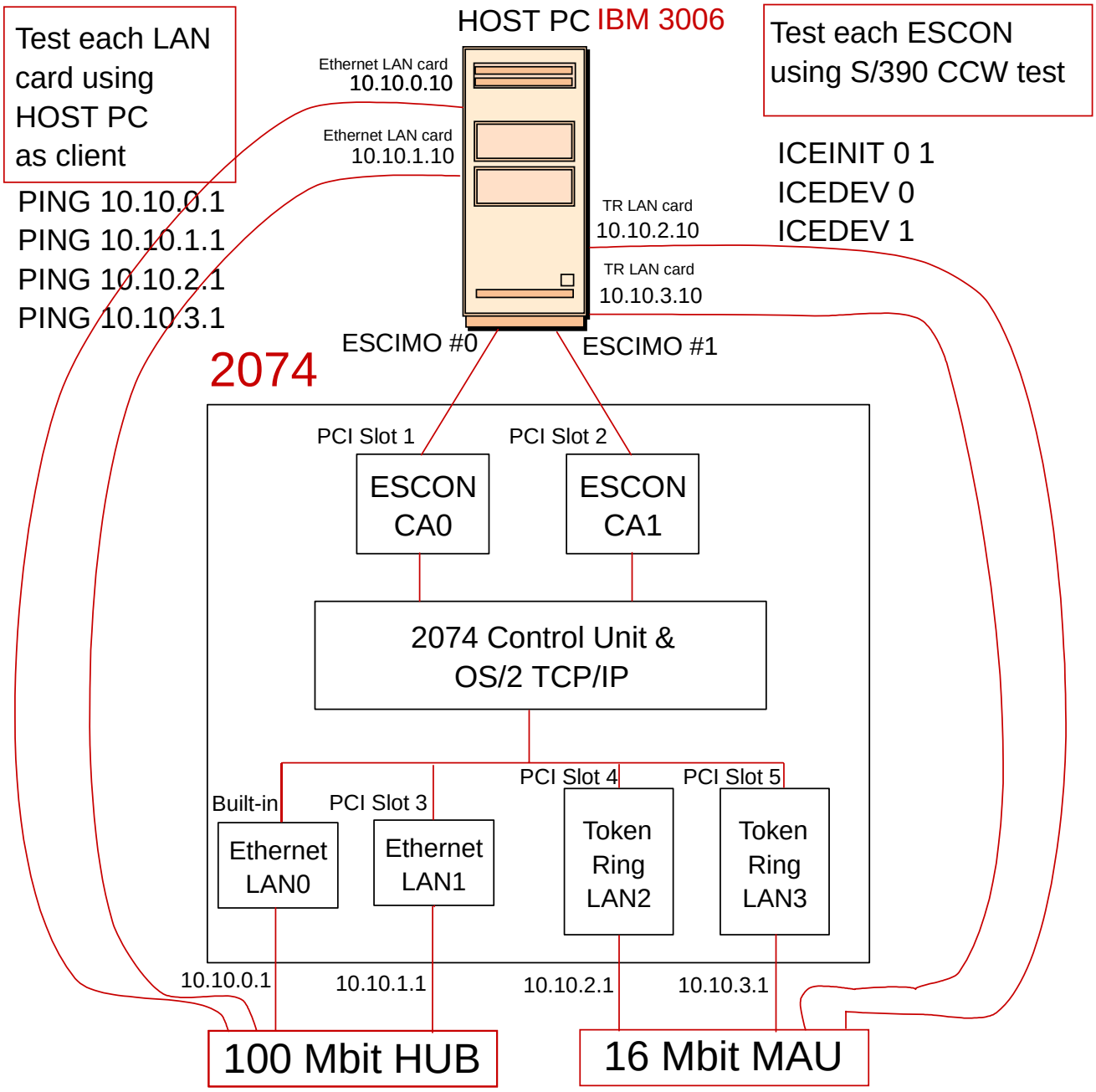
Client PC session to 10.10.1.1, comes back from 10.10.0.1

IBM 2074 LAN Adapters

- Using 2 LAN adapters in the client
  - Make the default be network 1 adapter on the 2074
  - Make the default be network 2 adapter in the client
  - Raises security issues



IBM 2074 Mfg Test



IP Address 10.10.(network).(card)

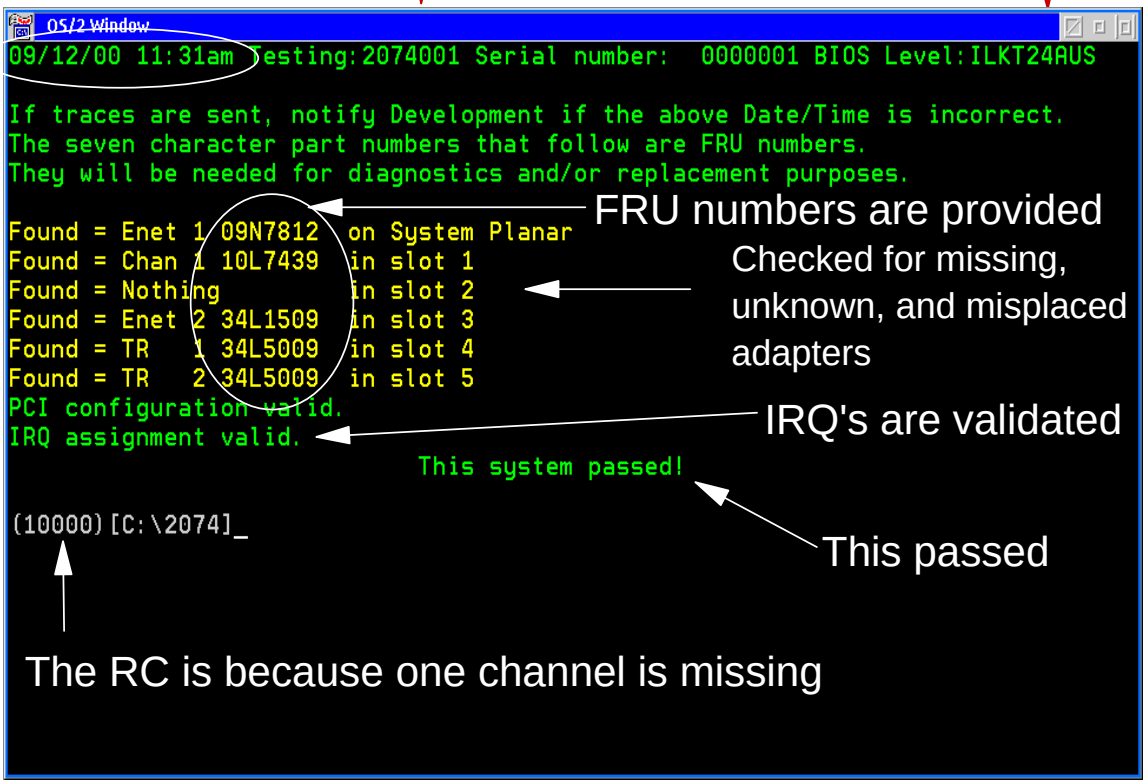
It is very important that each LAN card you are using is on a different network.

IBM 2074 Plugging Rules

- Plugging rules

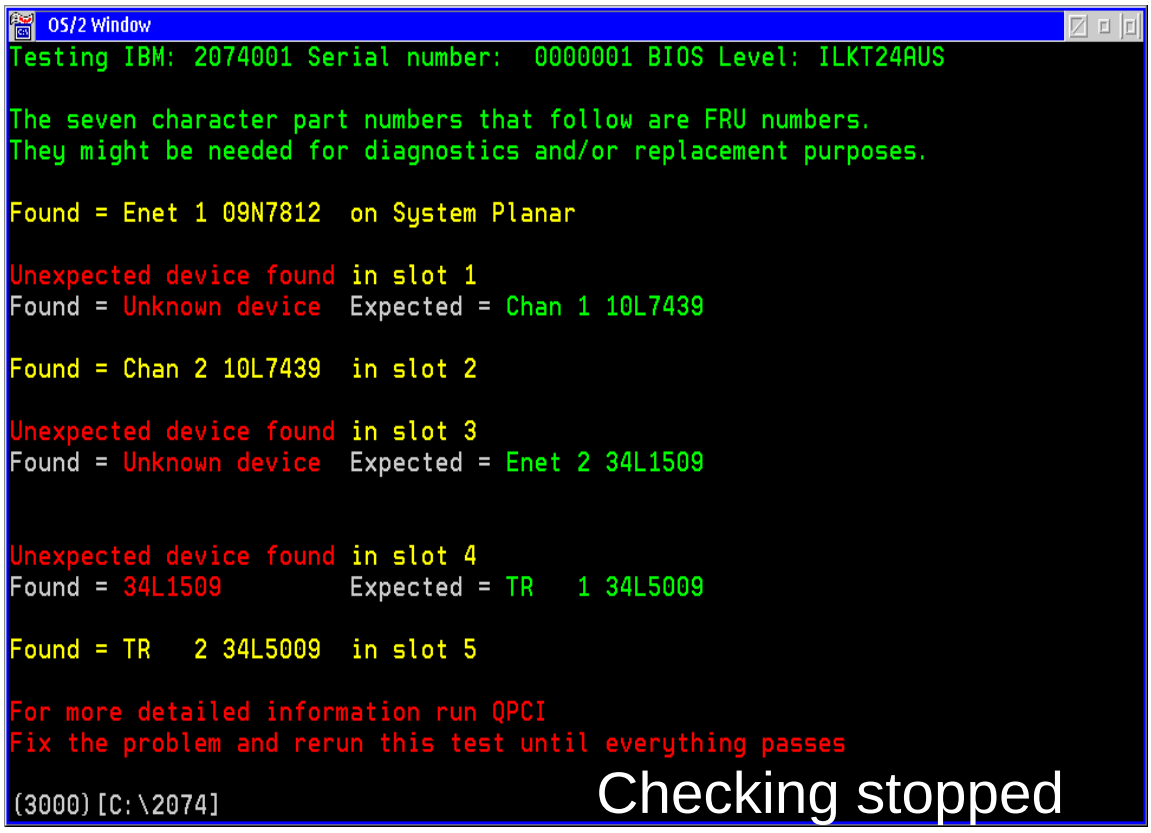
PCI Slot	LAN ID	CA ID	PCI bus	Adapter
N/A	LAN 0	N/A	33 Mhz	Built in Ethernet (1)
2	N/A	CA 0	33 Mhz	ESCON adapter (1)
3	N/A	CA 1	33 Mhz	ESCON adapter (2)
4	LAN 1	N/A	100 Mhz	Ethernet (2)
5	LAN 2	N/A	33 Mhz	Token Ring (1)
6	LAN 3	N/A	33 Mhz	Token Ring (2)

Read from BIOS on system planar



IBM 2074 Service Overview

- Service Overview
  - Customer calls 1 800 IBM-SERV (USA example)
    - No call home
  - Service is only provided on PCOM
    - Locally on the 2074
    - LAN attached on another 2074
  - CE determines what is wrong
    - Must ask customer what the problem is
    - Hardware problems using diagnostics
    - Software problem
      Configuration problem
      Fixes or Patches needed



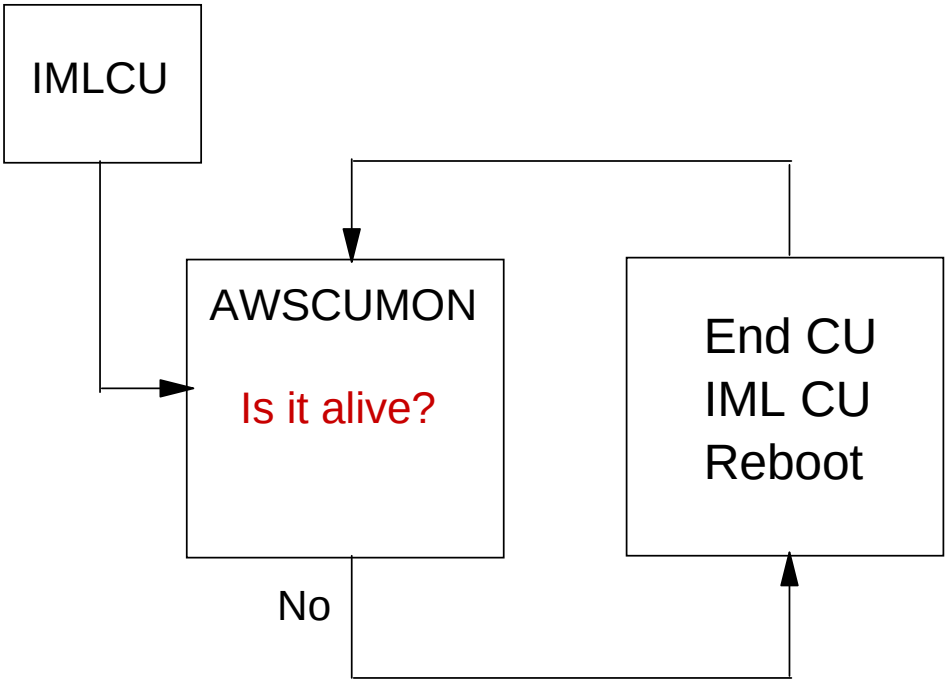
IBM 2074 RAS

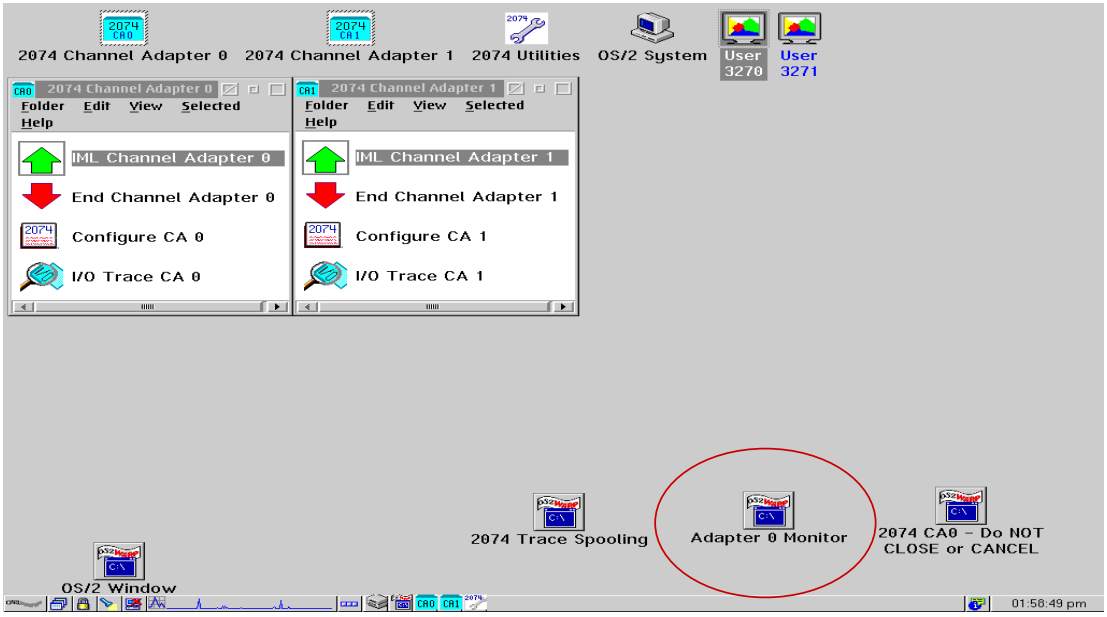
- Fault tolerance
  - Dual hot plugable power supplies (Light Path)
  - Redundant hot plugable fans (Light Path)
  - Optional ESCON adapter
  - Cross connected (see Redbook)
  - Retain some old 3174s
  - Auto reboot (on Ring 0 failure)
  - Monitor program (auto restart)

- Goal is to reboot and come back up
  - Consoles will transfer to alternate addresses

IBM 2074 Recovery Logic

- Recovery Logic





IBM 2074 Hardware Service

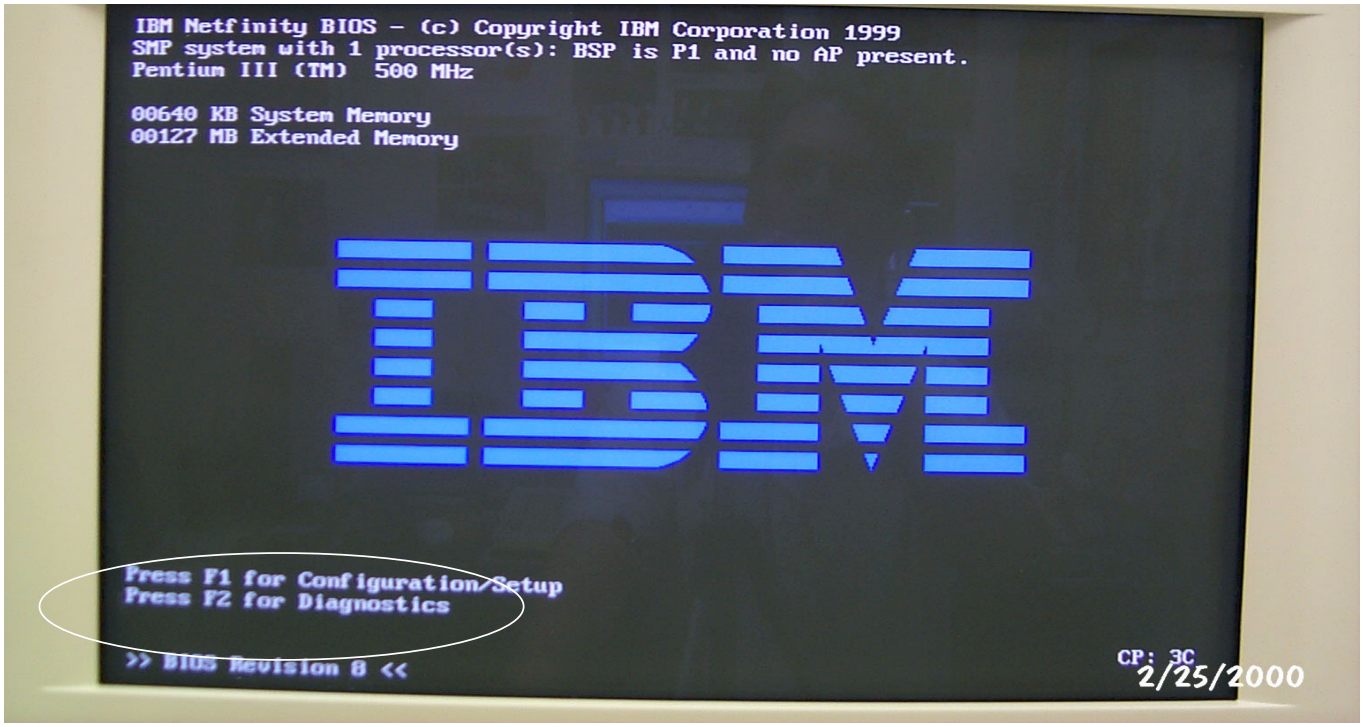
- POST (Power On Self Test)
  - Light Path
  - Memory check
  - Keyboard circuit
  - Mouse circuit
  - SCSI disk subsystem
  - IDE CD-ROM drive
  - Display circuit
  - Power
  - Fans
  - ESCON card

- System setup involves
  - Manufacturing
    - Check BIOS level (flash if required)
    - Set date and time
    - Enter 2074 serial number
    - Set BIOS defaults (known state)
    - Set SCSI defaults (known state)
    - Load 2074 Code
  - On site
    - Check for needed fixes and patches
    - Verify connections
    - Let customer configure

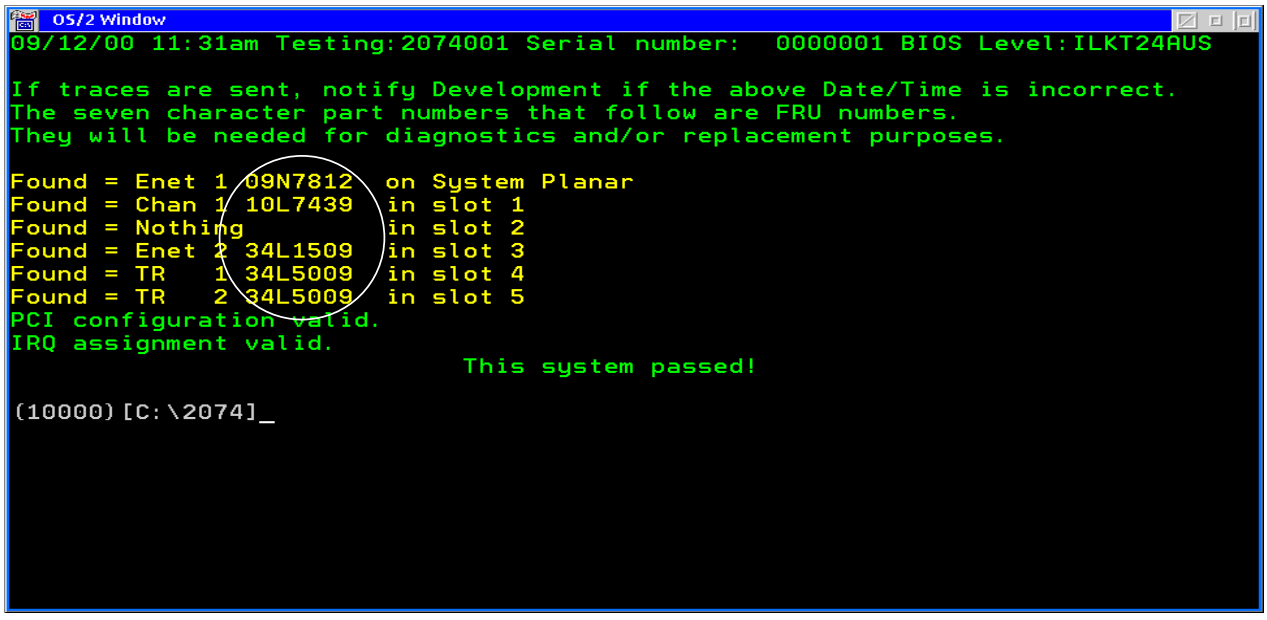
IBM 2074 Hardware Service

- Hardware Problem
  - All hardware has existing service procedure
    - No new hardware released for the product
  - xSeries
    - Built in diagnostics
    - Selected from BIOS at boot time (F2)
    - MAPS
    - Lights on planer for diagnostics (Lightpath)
      (Customer responsible to notice a failure)
      Fans
      Power
      Temp
      Subsystems
  - Each ESCON card has
    - Scrolling billboard giving:
      POST status
      Channel status
  - LAN adapters
    - Lights for activity and connection
    - Disruptive diagnostics packed
      on the 2074 Load CD
  - Display
    - Light for status

Diagnostics for the xSeries and the on planer Ethernet are in BIOS



Diagnostics for the LAN adapters are on the 2074 Load CD in diskette image format. Use CHECKPCI to determine which to use.



IBM 2074 BTITOOL

- Use BTITOOL SHOW NEIGHBOR INFO CARD=x to display
  - neighborhood node information.

    Channel is currently:Connected
    Flags field:0x00
    Node Parameters:0x00 0x0A 0xE5
    Type Number:009032 (F0 F0 F9 F0 F3 F2)
    Model Number:005 (F0 F0 F5)
    Manufacturer:IBM (C9 C2 D4)
    Plant:02 (F0 F2)
    Serial Number:000000041256
    (F0 F0 F0 F0 F0 F0 F0 F4 F1 F2 F5 F6)
    Tag:0x00 0xE1
- Use BTITOOL SHOW LINK INCIDENTS CARD=x to display
  - code violations, bit error, and link incident information.

    Link Incident Counts for card 1:
    Implicit Errors:0
    Bit Error Threshold:179
    Loss Of Signal:0
    Not Operational:0
    Sequence Timeout:0
    Unconditional Disconnect:0
    Unconditional Disconnect Response:0

    Cumulative Link Incident Counts for card 1:
    Implicit Errors:0
    Bit Error Threshold:179
    Loss Of Signal:0
    Not Operational:0
    Sequence Timeout:0
    Unconditional Disconnect:0
    Unconditional Disconnect Response:0
- Use BTITOOL HELP TEST to display
  - A help menu of possible commands

IBM 2074 Software Service

- Software Problem Overview
  - Snap Dump found
    - Upload and send to PE or DE
  - Trap Dump found
    - AWSERROR.LOG will log
    - DE might ask CE through PE for the dump
  - Traces needed beyond defaults
    - Determined by PE or DE
    - Upload and send to PE or DE
  - Error logs
    - Smaller than dumps
    - Upload and send to PE or DE
  - Patches and fixes from FTP site
    - Fits on a 1.44 floppy disk
    - Not LIC or microcode

      ftp://s390is.pok.ibm.com/2074 (IBM Intranet)

  - Can reload C: and D: partitions from Load CD
    - Make sure to save the customers configuration to diskette

      Note:
      DE is Development Engineering,
      PE is Product Engineering (Support),
      CE is a Customer Engineer

IBM 2074 Software Service

- Tracing, Dumps, and Logs
  - EMIO channel trace
    - Last 2000 lines of I/O, too small
    - Can use to see if you are tracing the correct address
  - EMIO trace spooling
    - Needed to get a trace of the device
    - Limited by available disk space
    - Trace is compressed
    - See C:\2074\AWSTRCSP.DOC for details
  - OS/2 TRAP DUMP Ring 0
    - Dumps OS/2 memory
    - G:\SADUMP\DUMPDATA.001 first one
    - D:\DUMPDATA.001 last one
  - OS/2 POPUPLOG
    - Will suppress OS/2 pop up failures
    - Records abend information in C:\POPUPLOG.OS2
    - Allows system to continue
  - SNAPDUMP
    - Called automatically
    - Gathers EMIO RAS data in C:\2074\?.RAM
    - Use "Send maint logs to IBM" to copy off to diskettes
    - Archives to G:
  - AWSERROR.LOG
    - Records configuration and startup errors in C:\2074
  - AWSESCON.CA0 and/or .CA1
    - For PE
- LAN Configuration
  - LANTRAN.LOG
    - LAN device driver information in C:\IBMCOM
    - Logs status

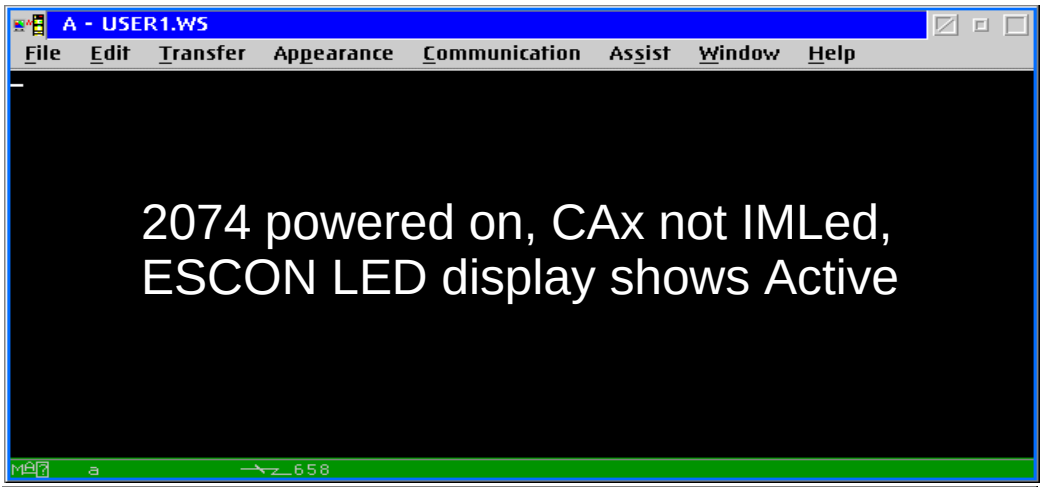
IBM 2074 Software Service

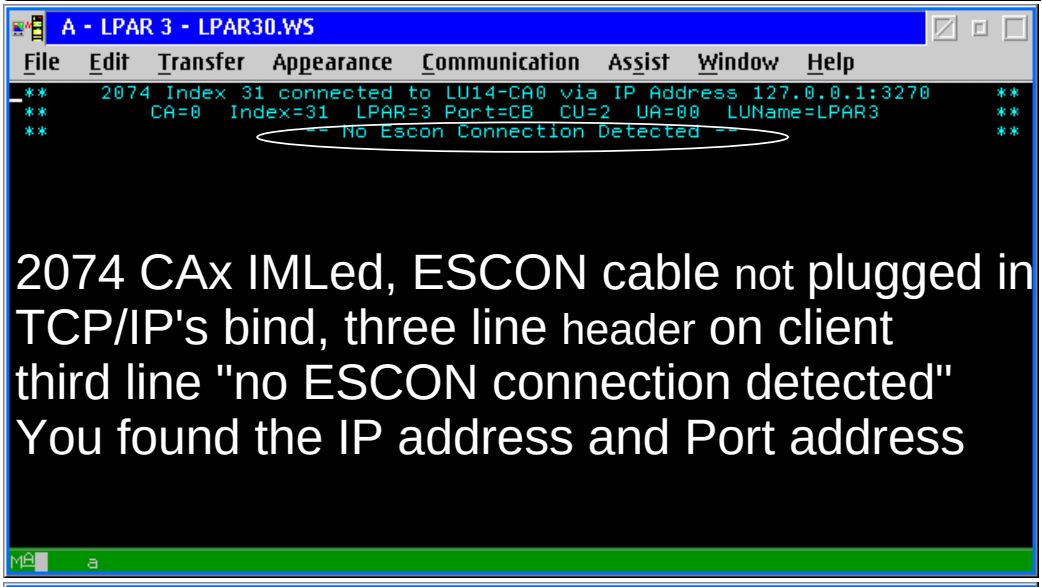
- LAN3274 Data stream trace
  - Saves the 3270 data stream in disk files by address to G:\TRACE
  - Collected by SNAPDUMP
  - AWSABEND.LST dynamically updated
  - Tracing must be enabled for these index numbers (devices) in the configurator
  - See C:\2074\LAN3274.DOC for help
  - Activated two ways:
    - As a parameter to LAN3274 (F2, F12 screen)
    - From command line
      LAN3274 (CA0/1)(parameter)(index, LUN, or ALL)(options)
  - The parameters are:
    - /S (grows without limits, will fill disk drive!)
      files called LANx00yy.TRC (up to 128 files)
      x=ESCON card number
      yy=index number of this device from DEVMAP
    - /S=n (where n is the number of 4K blocks)
      files called LANx00yy.TR0 and LANx00yy.TR1
      each yy will have 2 files (n*4096) bytes big.
      Up to 256 alternating files are created.
    - /SOFF (only valid from command line)
      Turns off this tracing by index or for all indexes
  - History file called LANx3274.TRC, TR0, TR1
    contains login attempts by clients. (1, 2, or 4 files)
  - The options are:
  - /RSP (response)
    - Wait for a response for each packet sent
    - Can be by device (F2) or the whole control unit (F2, F12)
  - /RTO=seconds (time out)
  - /Z (Enables optional I/O trace entries)
  - /Q (query the current state of the specified devices)
  - /ATTN (send async attention to host)
  - /DROP (Drop connection to client)
  - /POR (sends a POR (device end) to host)

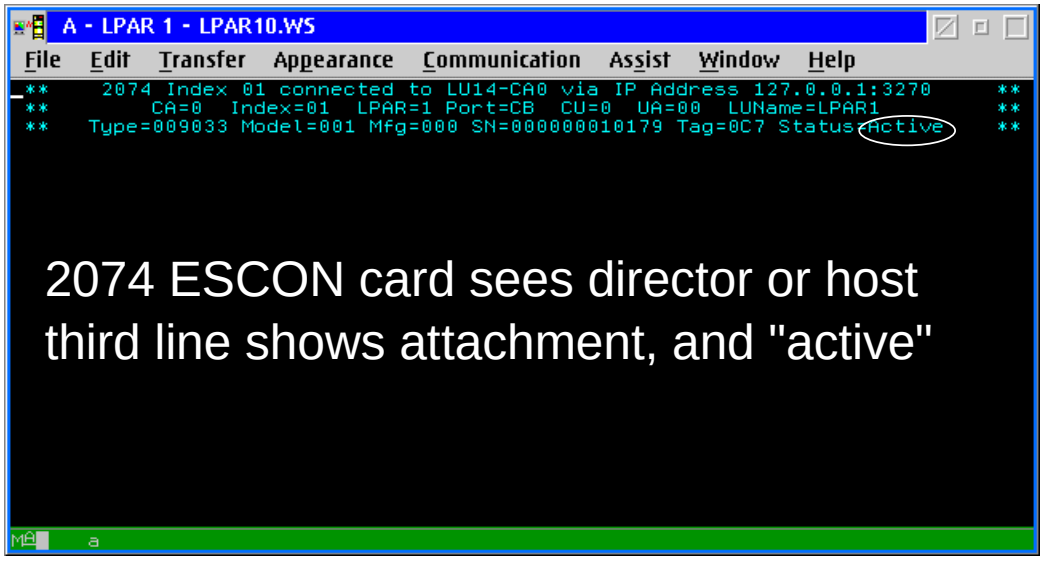
IBM 2074 Configuration Service

- None provided.
  - The customer needs available the
    - IOCP person
    - Network person
    - ESCON cable / director person
    - Operating System Programmer
- If you need to verify the ESCON Connection, use I/O Problem Determination (IOPD) on the SE.
- States of attach (not a complete list)
  - 2074 powered on, CAx not IMLed, ESCON cards LED display shows active
    - clients screen blank
  - 2074 CAx IMLed, "Do Not Close" shows "active" ESCON cable not plugged in
    - TCP/IP's bind, three line header on client
    - third line "no ESCON connection detected"
    - This means you found the IP address and Port
  - 2074 ESCON card sees director or host
    - third line shows attachment, and "active"
  - If you were to unplug the ESCON cable now
    - third line says "inactive". We retain the info
  - Host has channel varied on, "not validated"
    - third line is "active"
    - this means the CU UA doesn't match
  - Host has channel varied on and validated, the address is "online"
    - third line is "active"
    - the client session should be working. If not, then have the system programmer enable either a VTAM or a console session.

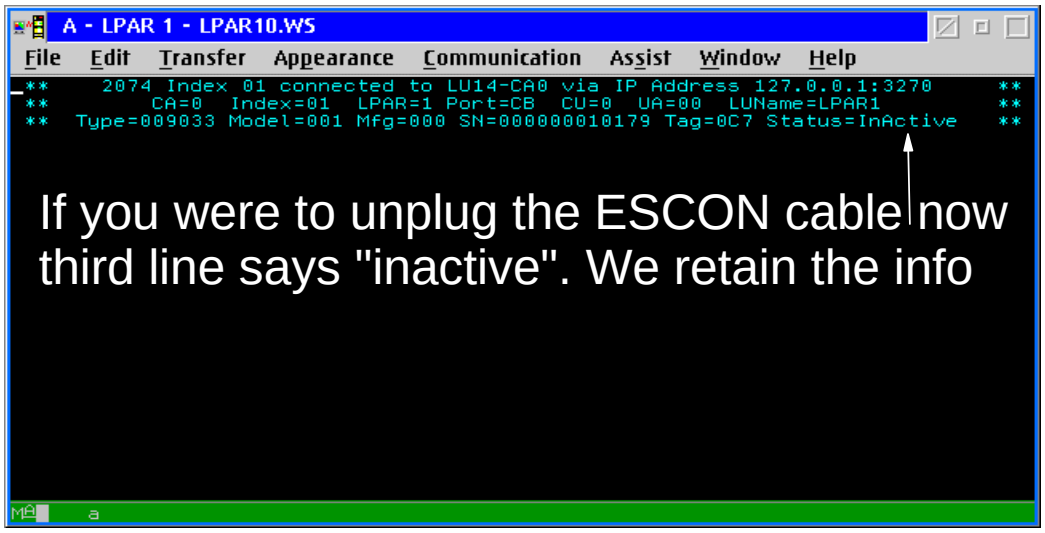
States of attach

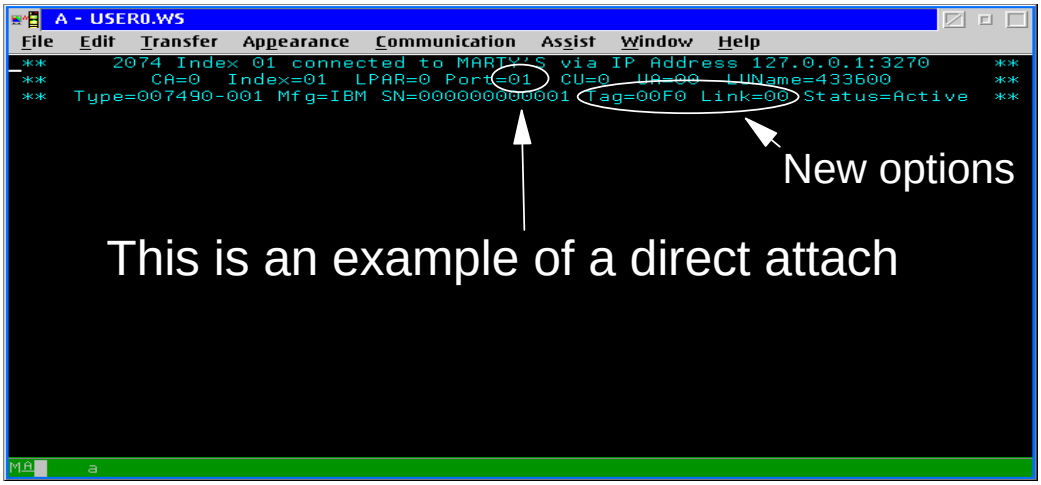


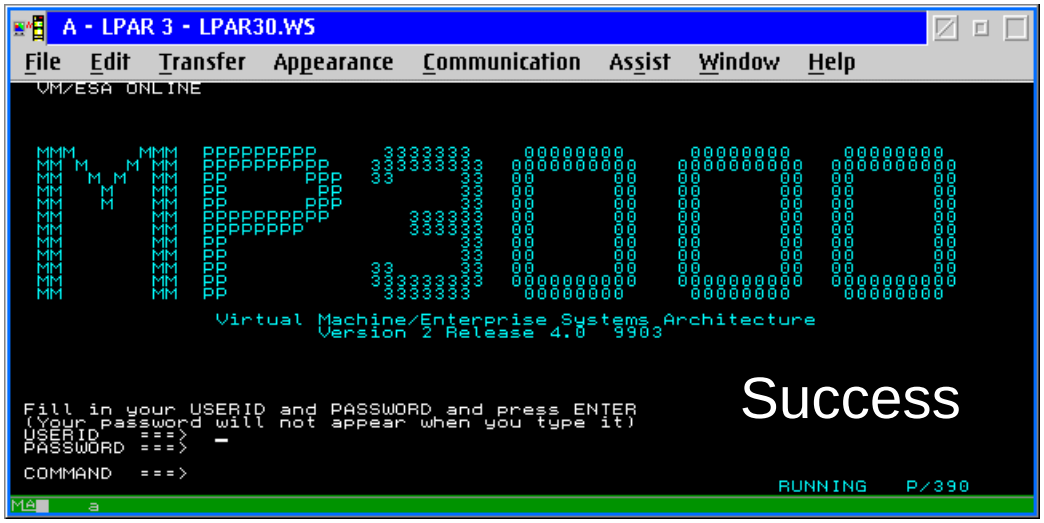




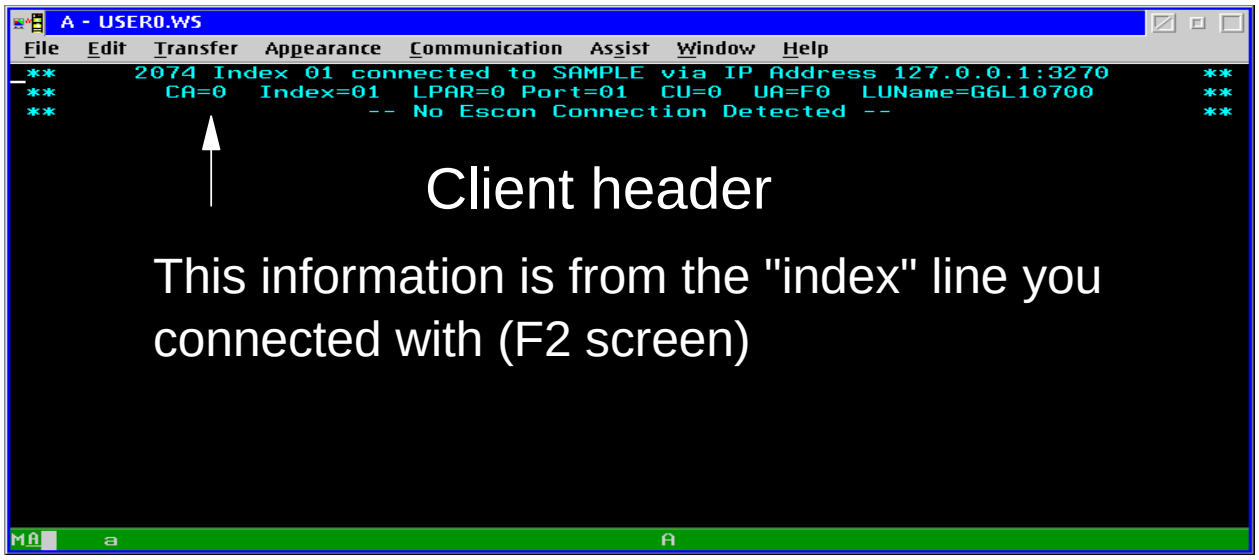
States of attach continued

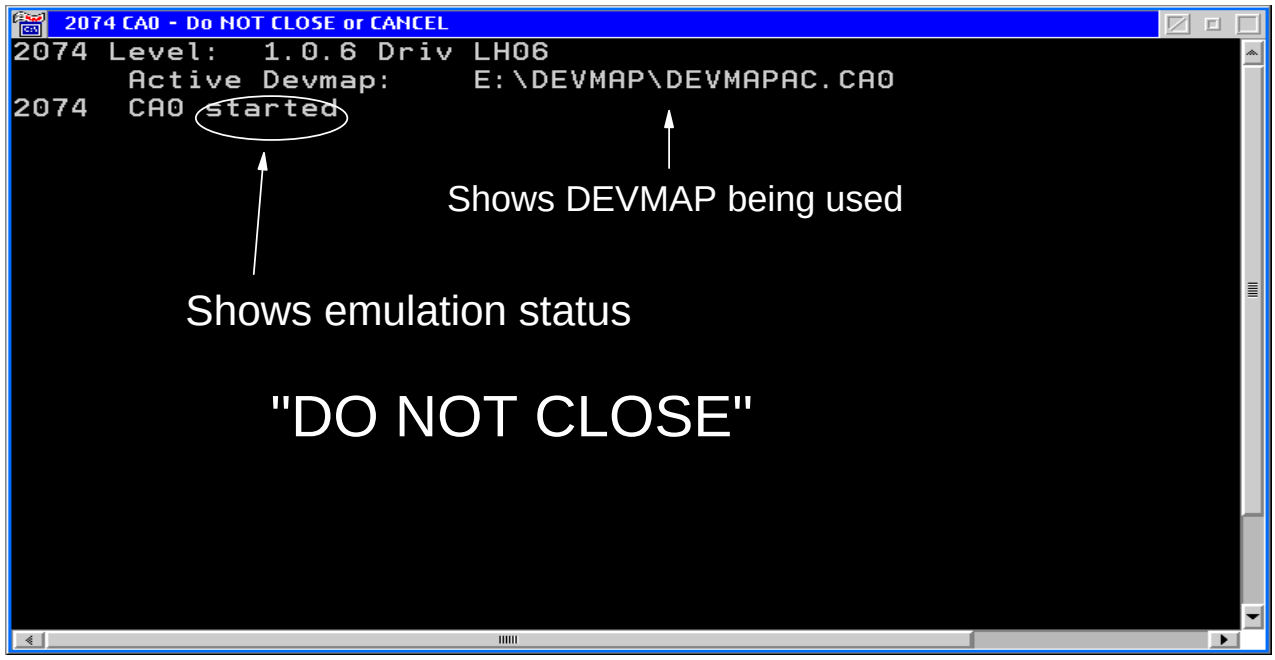




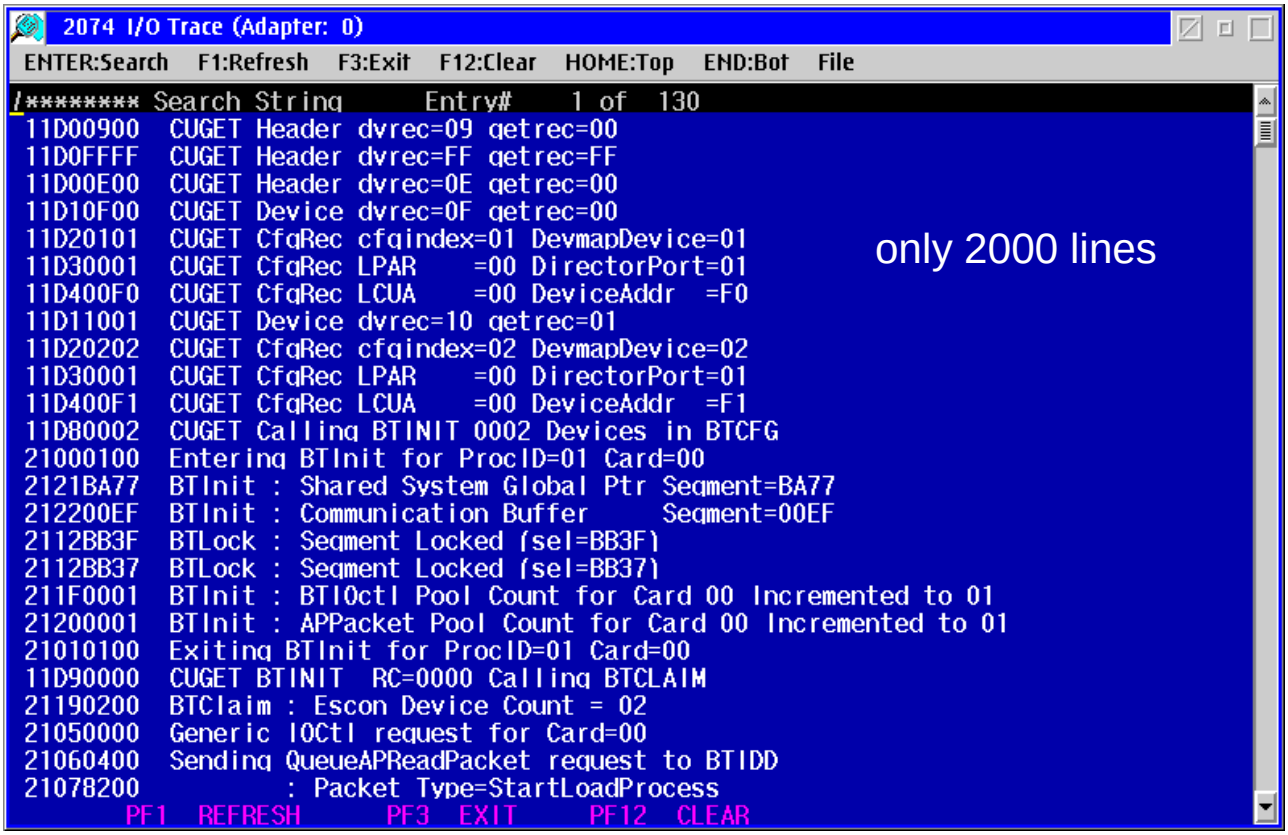



Configure CA 0
TRACE ENTRY CONTROLS
Trace These Elements:
XXX KRN CCA
Trace entries
Default is to trace everything
Trace Spooling Parameters
/B=64 /TH /S=0 /MEM
F1 = HELP
ESC = NO CHANGES
F6 = SAVE to FILE
cnetrace


A - USER0.WS
File Edit Transfer Appearance Communication Assist Window Help
** 2074 Index 01 connected to SAMPLE via IP Address 127.0.0.1:3270 **
** CA=0 Index=01 LPAR=0 Port=01 CU=0 UA=F0 LUName=G6L10700 **
** -- No Escon Connection Detected -- **
Client header
This information is from the "index" line you connected with (F2 screen)

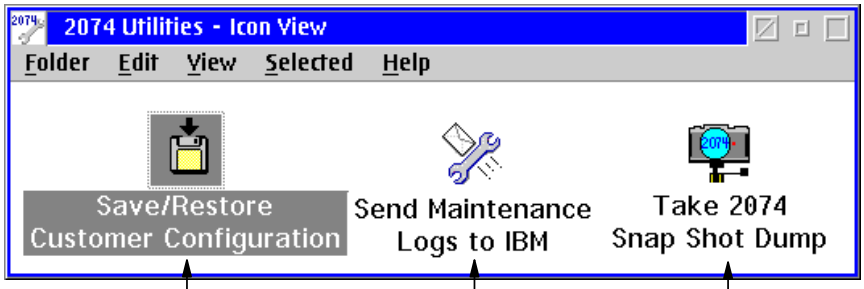

2074 CA0 - Do NOT CLOSE or CANCEL
2074 Level: 1.0.6 Driv LH06
Active Devmap: E:\DEVMAP\DEVMAPAC.CA0
2074 CA0 started
Shows DEVMAP being used
Shows emulation status
"DO NOT CLOSE"

I/O Trace window



only 2000 lines

Utilities



Use after you make changes and if you have to reload the disk drive

Will package the *.RAM file to fit on diskettes

Called by AWSABEND