Managing the 3746-9x0 as an APPN Network Node Using NetView/390

IBM Advanced Technical Support
Gaithersburg, MD USA

December 2000

Abstract

Many new users of the 3746-9x0 APPN Network Node Processor
are migrating from a 374x NCP subarea environment. This presentation
is intended to point out some of the major differences in these two
environments, as well as to provide information and examples
for using Tivoli NetView for OS/390 to manage the 3746 as an APPN
Network Node.

Agenda

- Some Subarea - APPN differences
- 3746 Network Management using NetView
  - ► NetView SNA Topology Manager
    - − With and without NetView graphics
  - ► NetView RUNCMD support for managing 3746 APPN functions
  - ► NetView Alerts generated by the 3746
- Summary

Some Subarea - APPN differences

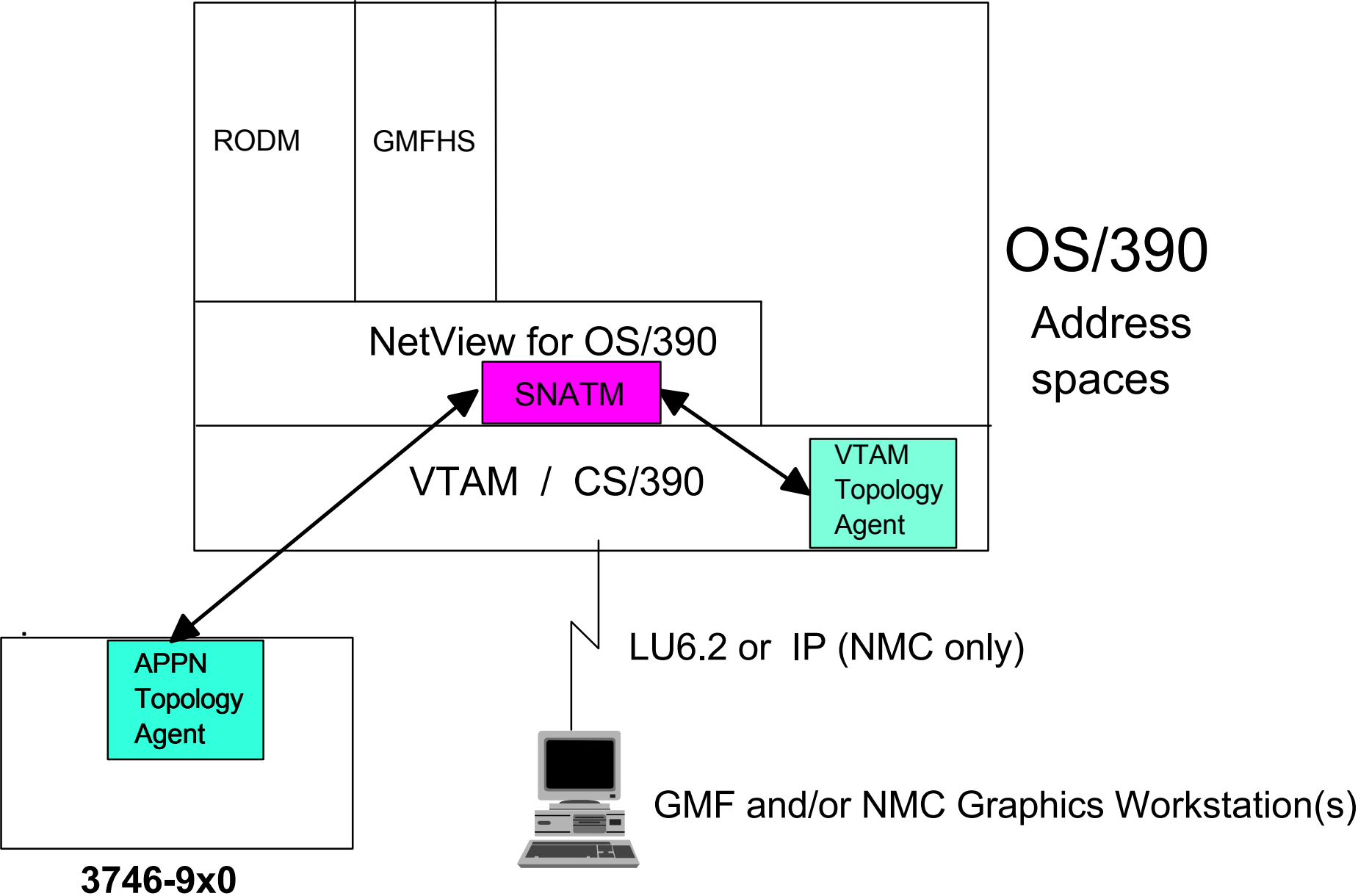Particularly for those who may be migrating from a 374x/NCP environment

- <u>VTAM displays</u>
  - ▶ Line / PU / LU definitions replaced by SW_Maj_Node / PU / LU
  - ▶ Information previously provided by NCP-oriented VTAM commands now obtained by APPN-oriented commands
    - – e.g., D NET,TOPO
  - ▶ Some user-written NetView CLISTs may need modification
- <u>Activating / deactivating 3746 ports and links</u>
  - ▶ Not a VTAM 'V NET' command
  - ▶ Use NetView command or 3746 Controller Configuration and Management (CCM) console
- <u>Displaying 3746 APPN resource information</u>
  - ▶ Use NetView command or CCM console
- <u>New set of APPN and other Alerts from the 3746</u>

What is needed to implement graphic 3746 APPN management by NetView?

(See next chart for pictorial representation)

- **<u>Resource Object Data Manager (RODM)</u>**
  - ► Stores topology and status information in main storage cache
- **<u>Graphic Monitor Facility Host Subsystem (GMFHS)</u>**
  - ► Provides interface to graphics workstation(s)
  - ► RODM and GMFHS are components of NetView but run in separate address spaces
- **<u>SNA Topology Manager (SNATM)</u>** component of NetView
  - ► Started by activation of FLBTOPO autotask
- **<u>VTAM Topology Agent</u>** active
  - ► VTAM startup option or F NET,VTAMOPTS,OSIMGMT=YES
- **<u>3746 APPN Topology Agent</u>** active
- NetView 'TOPOSNA MONITOR' command
- At the NetView graphics workstation(s):
  - ► **<u>NetView GMF or NetView Management Console (NMC)</u>** installed & running on server and client workstation(s)
  - ► Establish **<u>LU6.2 or IP (NMC only) connection</u>** between NetView and server workstation

NetView Graphics Environment

OS/390

Address spaces

RODM   GMFHS

NetView for OS/390

SNATM

VTAM / CS/390

VTAM Topology Agent

APPN Topology Agent

3746-9x0

LU6.2 or IP (NMC only)

GMF and/or NMC Graphics Workstation(s)

3746 Network Node Management from NetView SNA Topology Manager (SNATM)

- Monitor APPN/HPR network topology
  - ► Connectivity between network nodes
- Monitor APPN/HPR local topology
  - ► Transmission groups
  - ► Ports
  - ► Logical Links
  - ► Adjacent network nodes
  - ► End nodes
  - ► LEN nodes
- Activate / deactivate ports and links
- Perform other APPN management functions
  - ► Details later in presentation

Notes on the following charts

The next chart depicts the system configuration
used to create the subsequent screen captures. Note that
the link-attached 3174 on the left of the chart is the
'star of the show'; it is the device we used to demonstrate
much of NetView's 3746 APPN management capabilities.

The screen captures were created using GMF (NetView
Graphic Monitor Facility). The NMC (NetView Management
Console) Java-based displays are very similar, and the
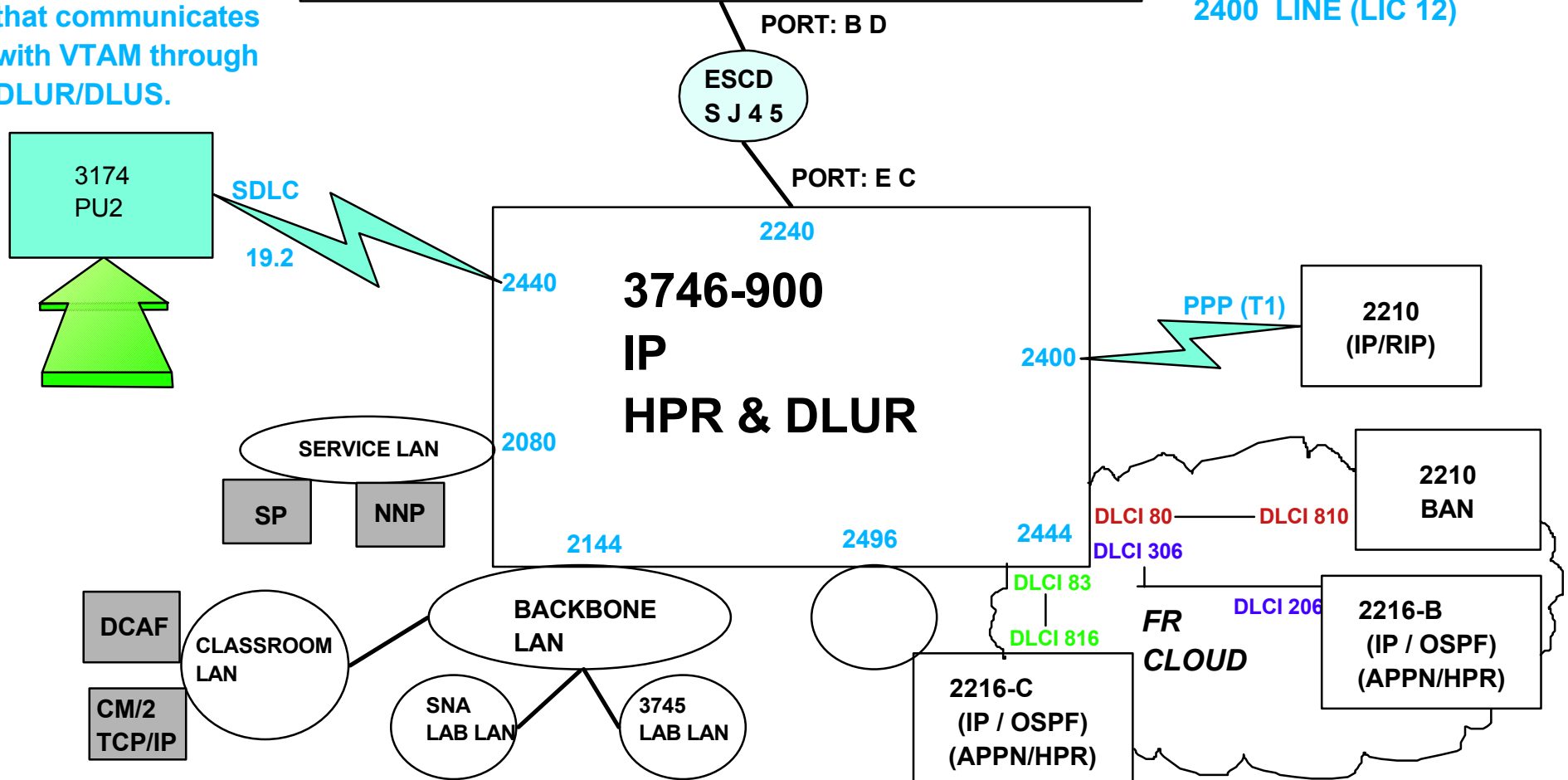functions demonstrated are identical on GMF or NMC.

3746-900 APPN configuration

This 3174 is the network component that will be used to demonstrate the NetView APPN capabilities.
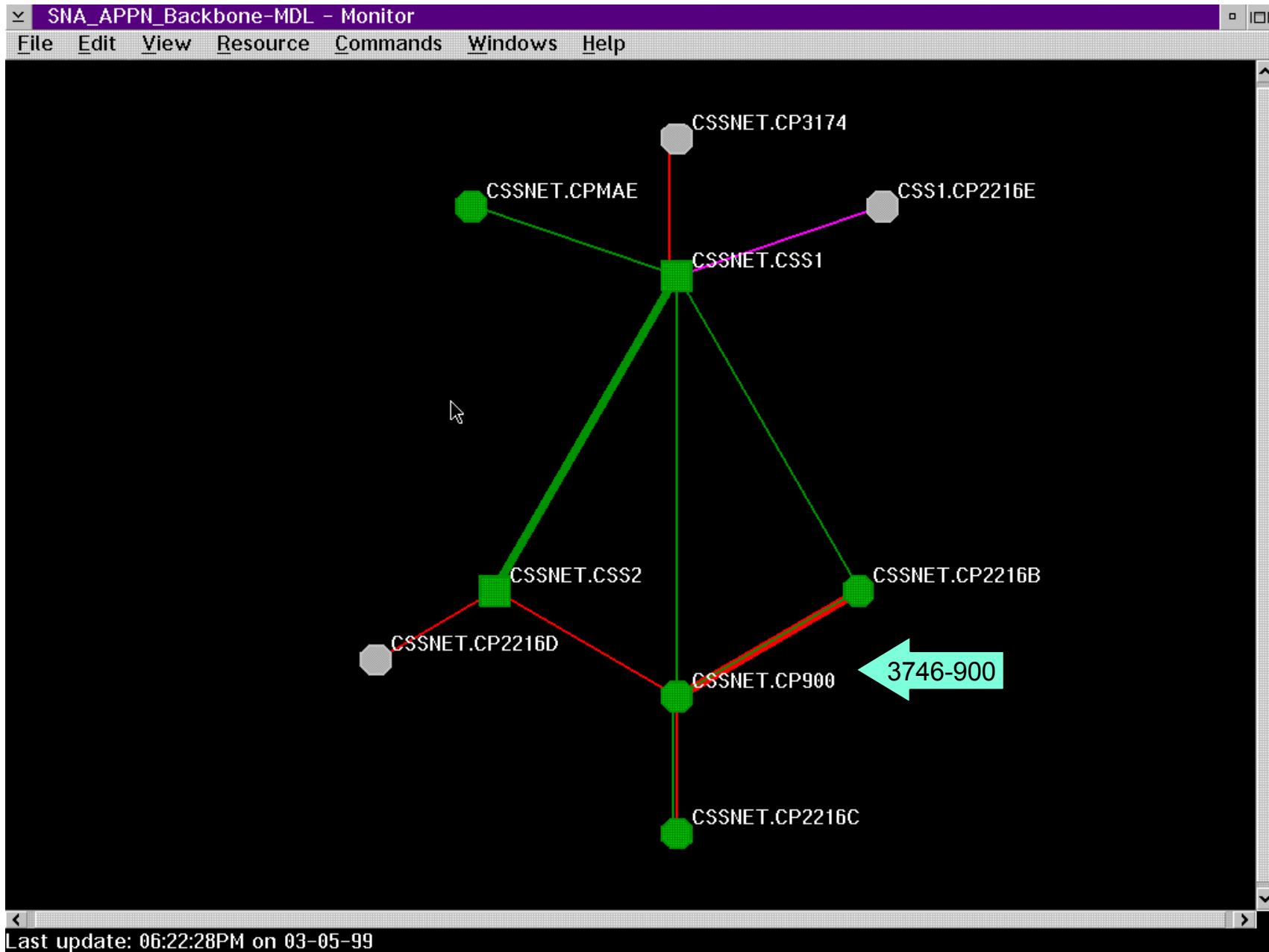Note:
The 3174 is a PU2 that communicates with VTAM through DLUR/DLUS.

Tivoli NetView for OS/390 R2	VTAM APPN/HPR,DLUS
OS/390	Station:0A MVS:639
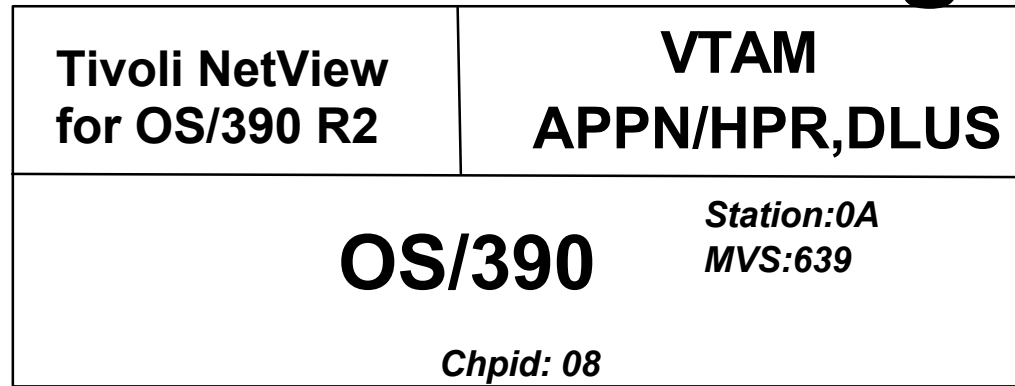
3746 Ports:
2240 ESCON
2440 LINE (LIC 11)
2080 SERV.RING
2144 TIC 3
2496 TIC 3
2440 LINE (LIC 11)
2444 LINE (LIC 11)
2400 LINE (LIC 12)

Chpid: 08

PORT: B D

ESCD
S J 4 5

PORT: E C

3174
PU2

SDLC

19.2

2440

2240

3746-900
IP
HPR & DLUR

2400

PPP (T1)

2210
(IP/RIP)

2080

SERVICE LAN

SP   NNP

2144

2496

2444

DLCI 80 ——— DLCI 810
DLCI 306

2210
BAN

DCAF

CM/2
TCP/IP

CLASSROOM
LAN

BACKBONE
LAN

SNA
LAB LAN

3745
LAB LAN

DLCI 83
DLCI 816

FR
CLOUD

DLCI 206

2216-B
(IP / OSPF)
(APPN/HPR)

2216-C
(IP / OSPF)
(APPN/HPR)

(C) IBM CORPORATION 2000

GMF View of an APPN Network backbone

(C) IBM CORPORATION 2000

GMF View of a 3746-900 and its transmission groups

(TG 21 between CP900 and CSS1 is highlighted)

(C) IBM CORPORATION 2000
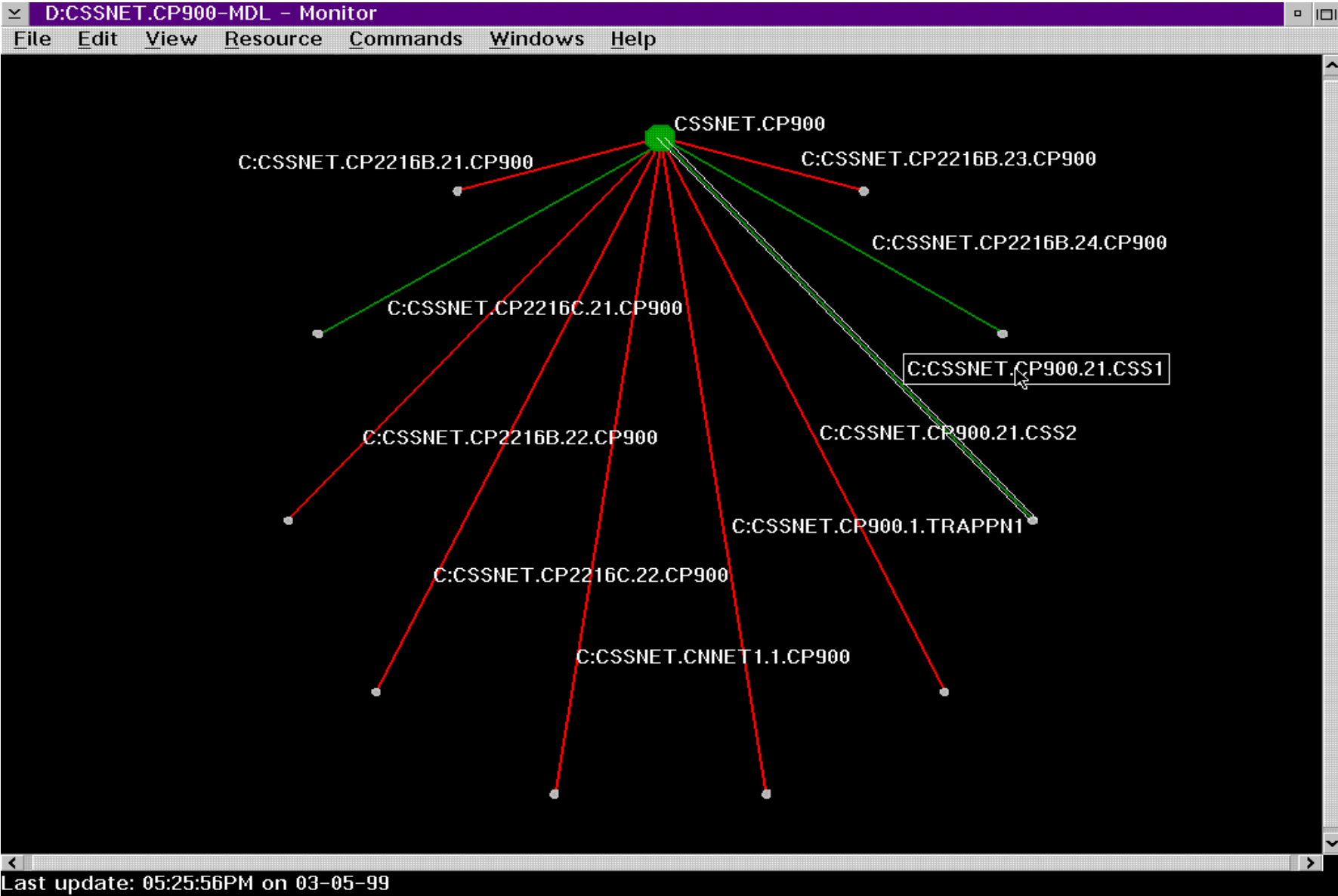
Displaying ports and logical links on a 3746-900 from GMF

(C) IBM CORPORATION 2000
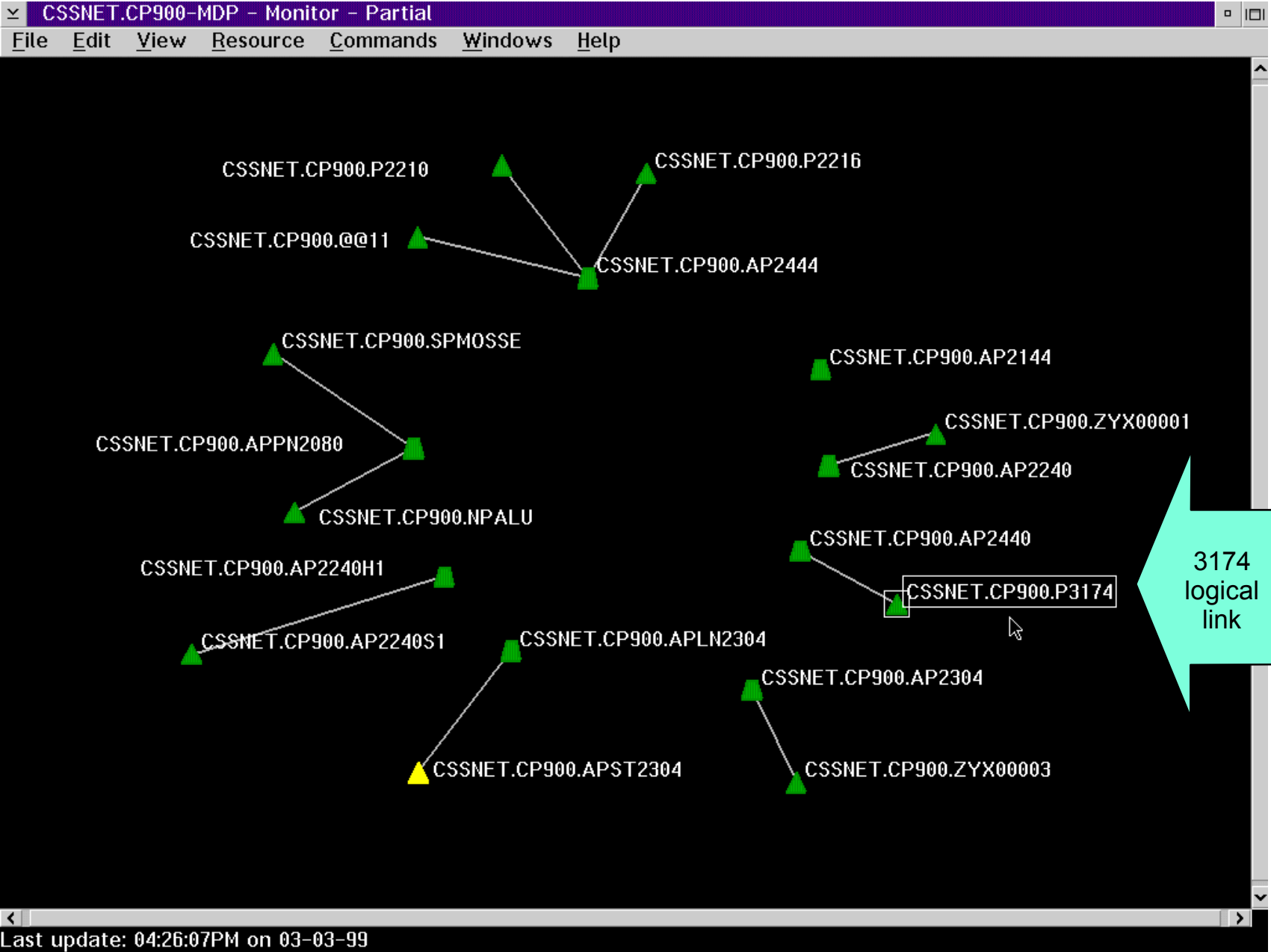
The VTAM Switched Major Node definition for the 3174 PU/LU

```
C - C - 3270 Emulator
 File   Edit   Transfer   Settings   Keyboard   Help
 NETVIEW.BRWS ------ BROWSE ET3174    (DSIVTAM ) --- LINE 00000 TO 00010 OF 00010
                                                        SCROLL ==> CSR
----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----
******************************* TOP OF DATA ************************************
ET3174     VBUILD TYPE=SWNET
* ------------------------------------------------------------------------ *
*       SWNET MACRO FOR 3746-900 DLUR SUPPORTED SDLC 3174              *
* ------------------------------------------------------------------------ *
*
PU3174S PU ADDR=01,USSTAB=USS3270A,                                 C
               MODETAB=AMODETAB,DLOGMOD=M2SDLCQ,                     C
               ANS=CONTINUE,DISCNT=NO,                               C
               IDBLK=999,IDNUM=37461
DLU74S1  LU  LOCADDR=02
 ***************************** BOTTOM OF DATA **********************************




 CMD==> _
 TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
2B■C                                                           o-o
```
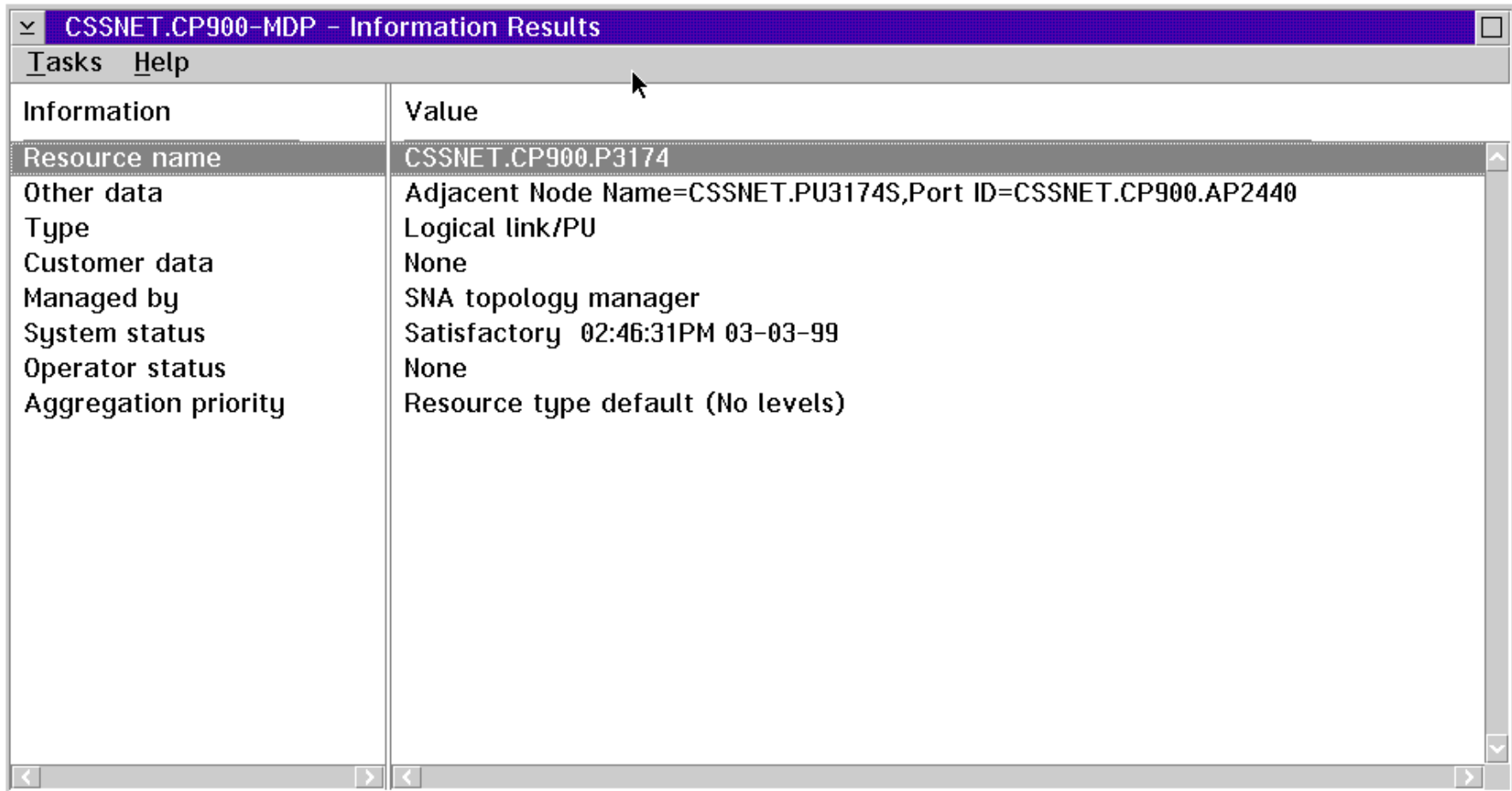
Context menu for a logical link

Press right mouse button while mouse pointer is over object to get context menu

(C) IBM CORPORATION 2000
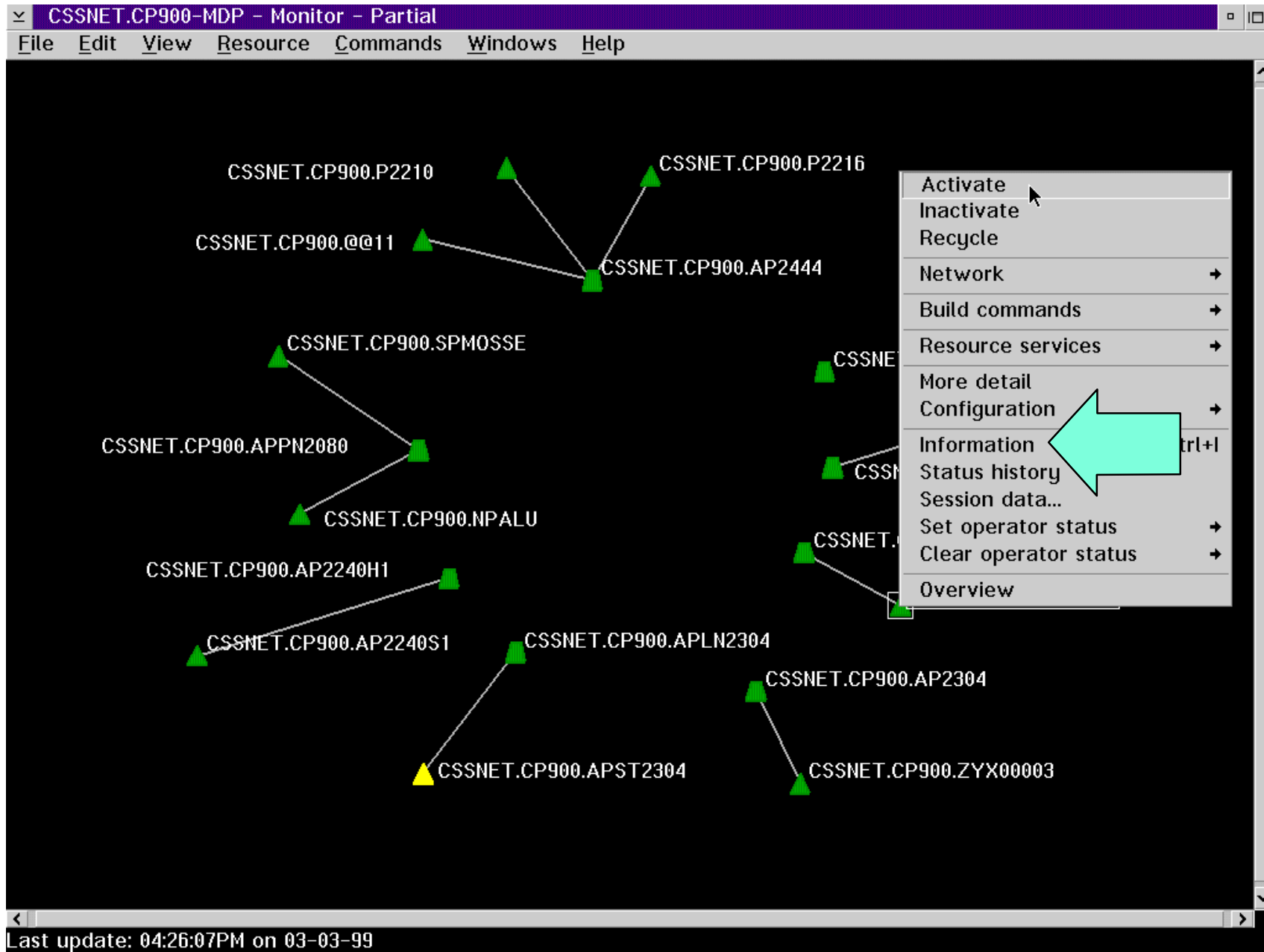
Information available to the operator about the resource

Select 'Information' from context menu

Information	Value
CSSNET.CP900-MDP – Information Results	
Tasks Help	
Information	Value
Resource name	CSSNET.CP900.P3174
Other data	Adjacent Node Name=CSSNET.PU3174S,Port ID=CSSNET.CP900.AP2440
Type	Logical link/PU
Customer data	None
Managed by	SNA topology manager
System status	Satisfactory 02:46:31PM 03-03-99
Operator status	None
Aggregation priority	Resource type default (No levels)
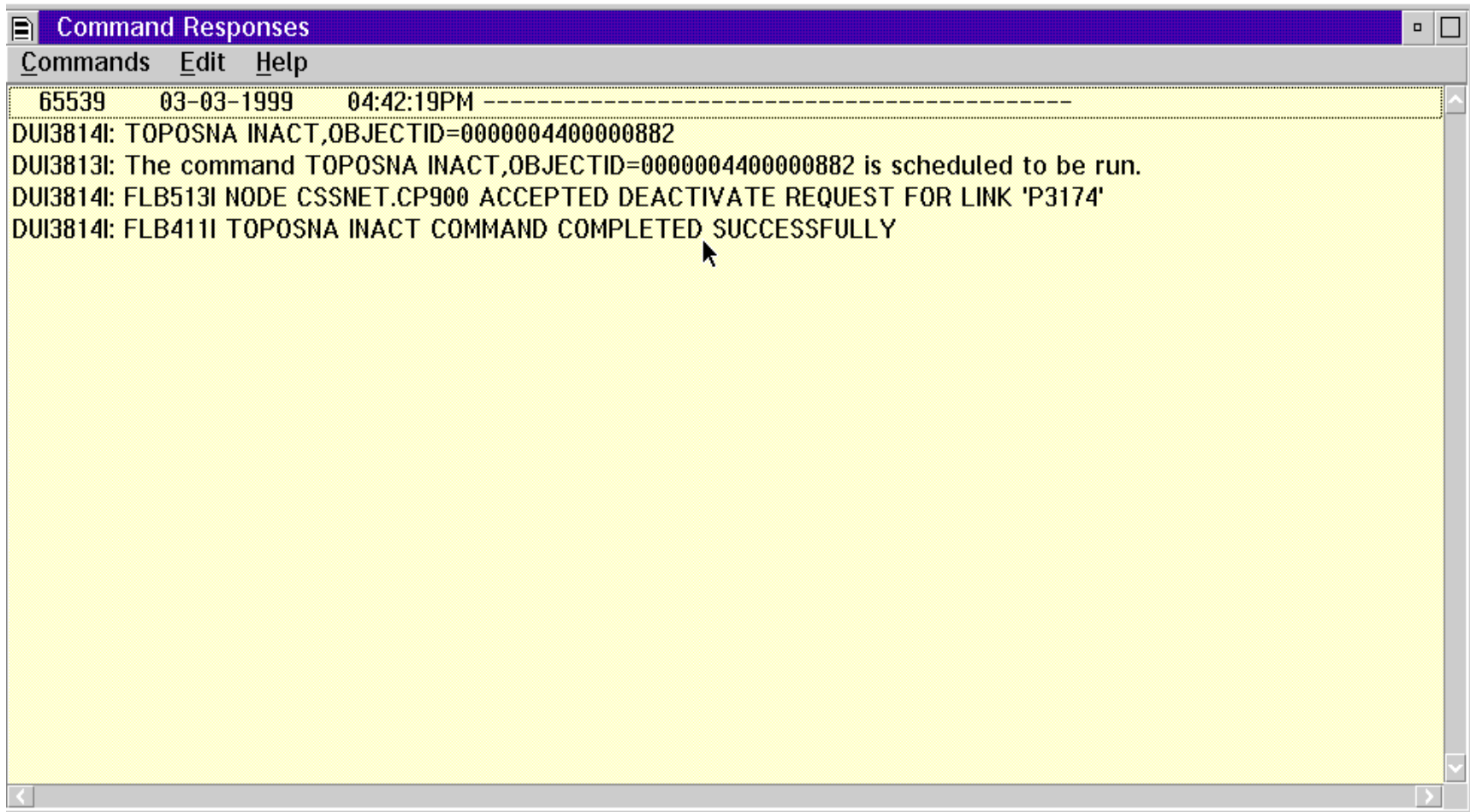
Suppose we selected 'Inactivate' from the context menu
for the 3174 logical link. The following popup appears:

Graphic Monitor – Message

DUI1660W: You have requested to run 'Inactivate'.

1 of 1 selected resources are applicable for
processing.

[Continue] [Cancel] [Help]

(C) IBM CORPORATION 2000
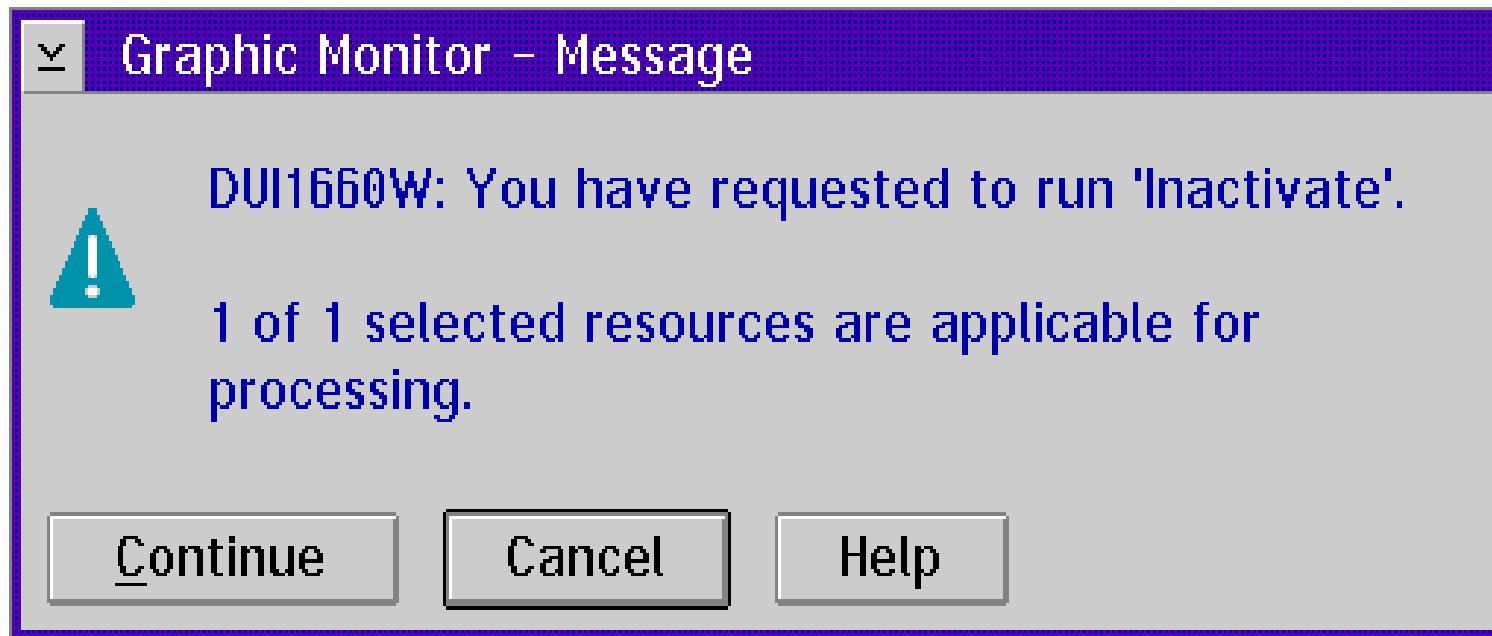
Command Log window at the GMF / NMC Console after selecting 'Inactivate'

Command Responses

Commands   Edit   Help

```
  65539      03-03-1999       04:42:19PM -----------------------------------------
DUI3814I: TOPOSNA INACT,OBJECTID=0000004400000882
DUI3813I: The command TOPOSNA INACT,OBJECTID=0000004400000882 is scheduled to be run.
DUI3814I: FLB513I NODE CSSNET.CP900 ACCEPTED DEACTIVATE REQUEST FOR LINK 'P3174'
DUI3814I: FLB411I TOPOSNA INACT COMMAND COMPLETED SUCCESSFULLY
```
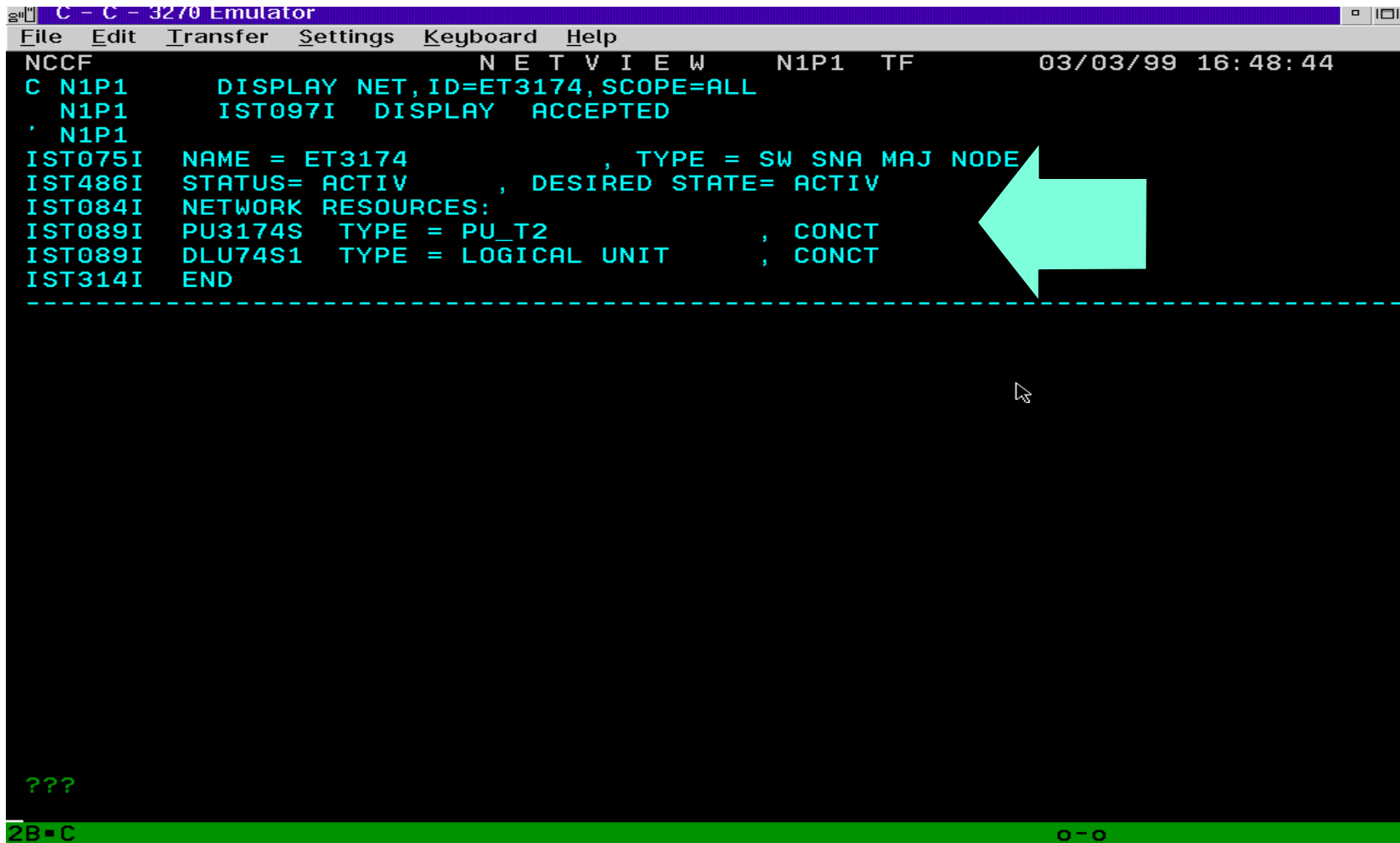
... while on the NetView network log we see

```
C - C - 3270 Emulator                                                    □ |□|
File  Edit  Transfer  Settings  Keyboard  Help
STATMON.BROWSE      ACTP  NETWORK LOG FOR 03/03/99 (99062) COLS 017 094  16:48 A
HOST: HOST16              *1*     *2*    *3*    *4*            SCROLL ==> CSR
 ---2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----
 N1P1      16:47:40    TOPOSNA INACT,OBJECTID=0000004400000882
 N1P1   P% 16:47:42    IST619I   ID = PU3174S   FAILED - RECOVERY IN PROGRESS
 N1P1   P% 16:47:43    IST621I   RECOVERY SUCCESSFUL     FOR NETWORK RESOURCE PU317
 N1P1      16:47:44    FLB513I NODE CSSNET.CP900 ACCEPTED DEACTIVATE REQUEST FOR
 N1P1      16:47:44    FLB411I TOPOSNA INACT COMMAND COMPLETED SUCCESSFULLY
                       **** END OF LOG ****


                                                    ▷




CMD==> _
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
2B■C                                                        o-o
```

(C) IBM CORPORATION 2000

The current state of the resources from VTAM's perspective ...

```
 C - C - 3270 Emulator
 File   Edit   Transfer   Settings   Keyboard   Help
 NCCF                        N E T V I E W     N1P1   TF          03/03/99 16:48:44
 C N1P1      DISPLAY NET,ID=ET3174,SCOPE=ALL
   N1P1      IST097I  DISPLAY  ACCEPTED
 ' N1P1
 IST075I   NAME = ET3174              , TYPE = SW SNA MAJ NODE
 IST486I   STATUS= ACTIV      , DESIRED STATE= ACTIV
 IST084I   NETWORK  RESOURCES:
 IST089I   PU3174S   TYPE = PU_T2              , CONCT
 IST089I   DLU74S1   TYPE = LOGICAL UNIT       , CONCT
 IST314I   END
 --------------------------------------------------------------------------------




 ???

2B■C                                                              o-o
```
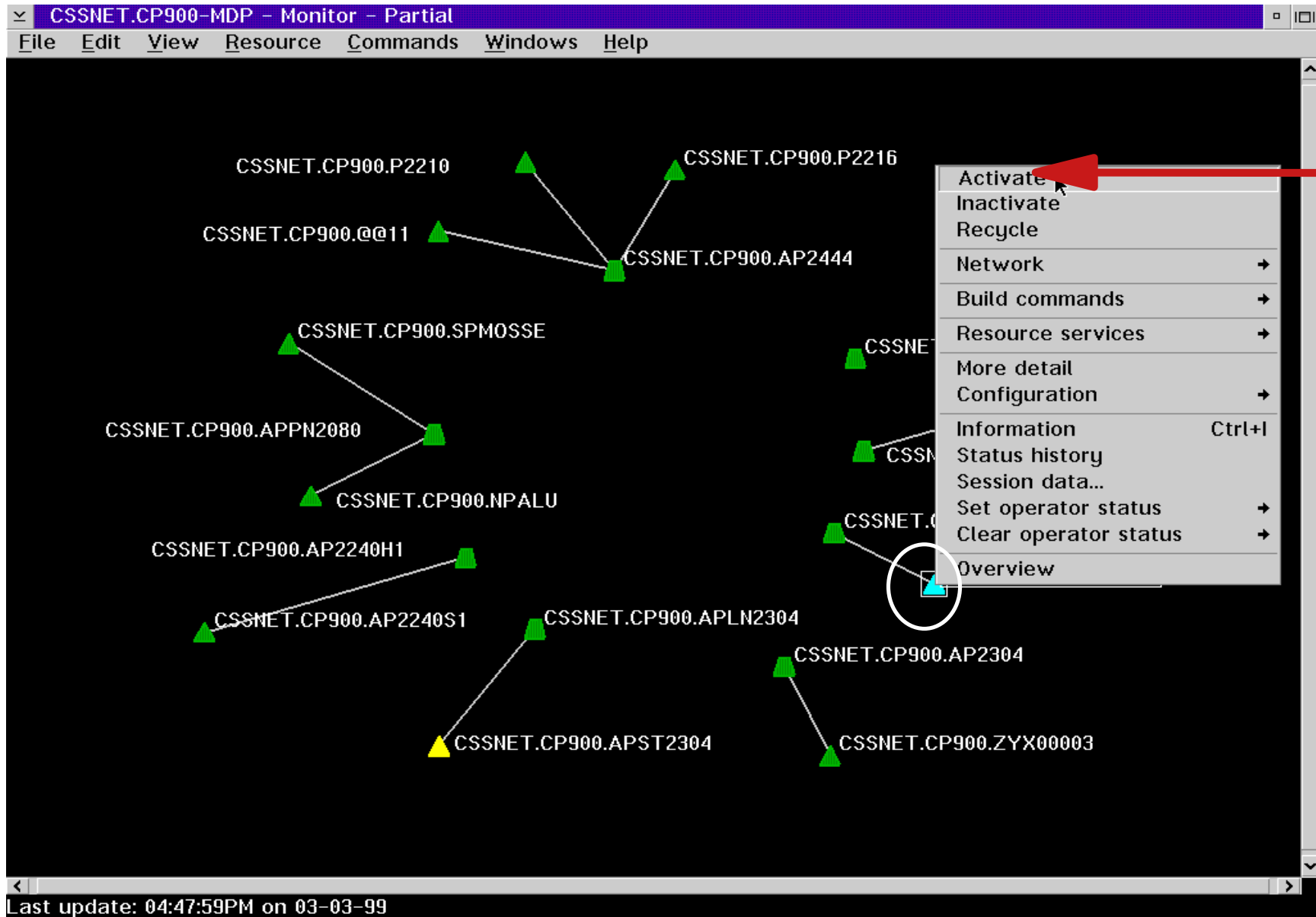
(C) IBM CORPORATION 2000

... and from the graphics console perspective:
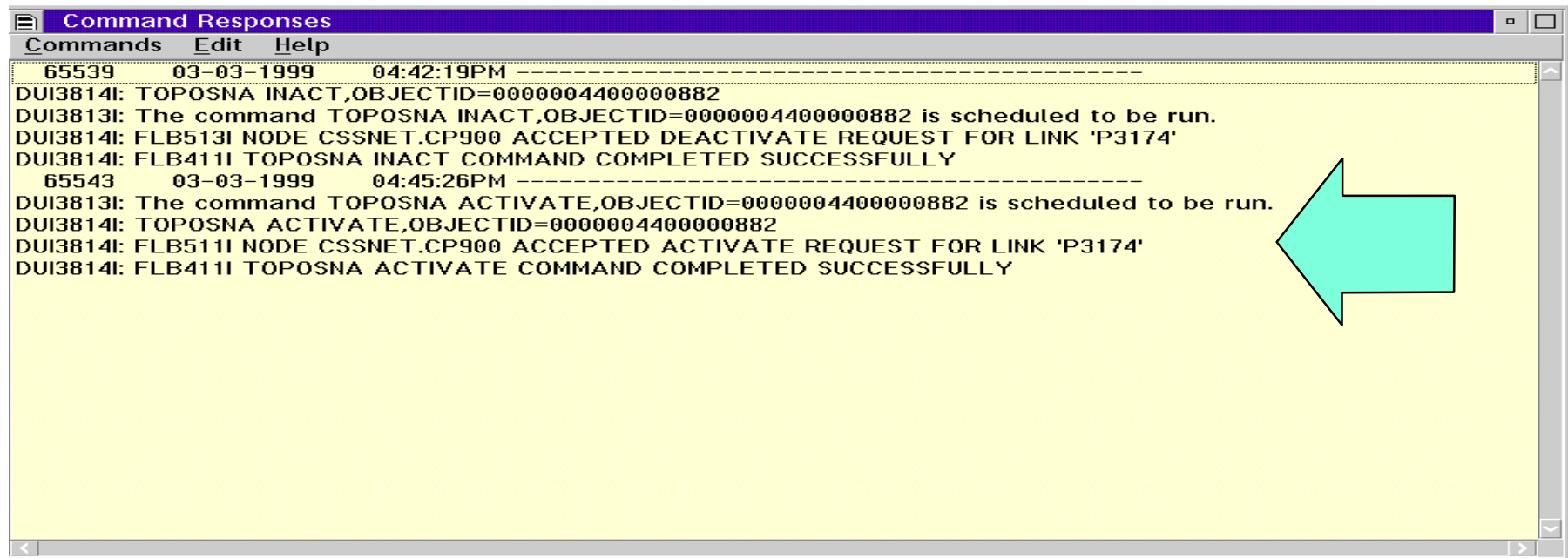
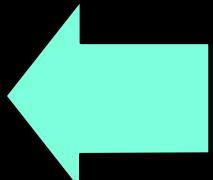(color change from green to blue for operator-initiated deactivate)

(C) IBM CORPORATION 2000
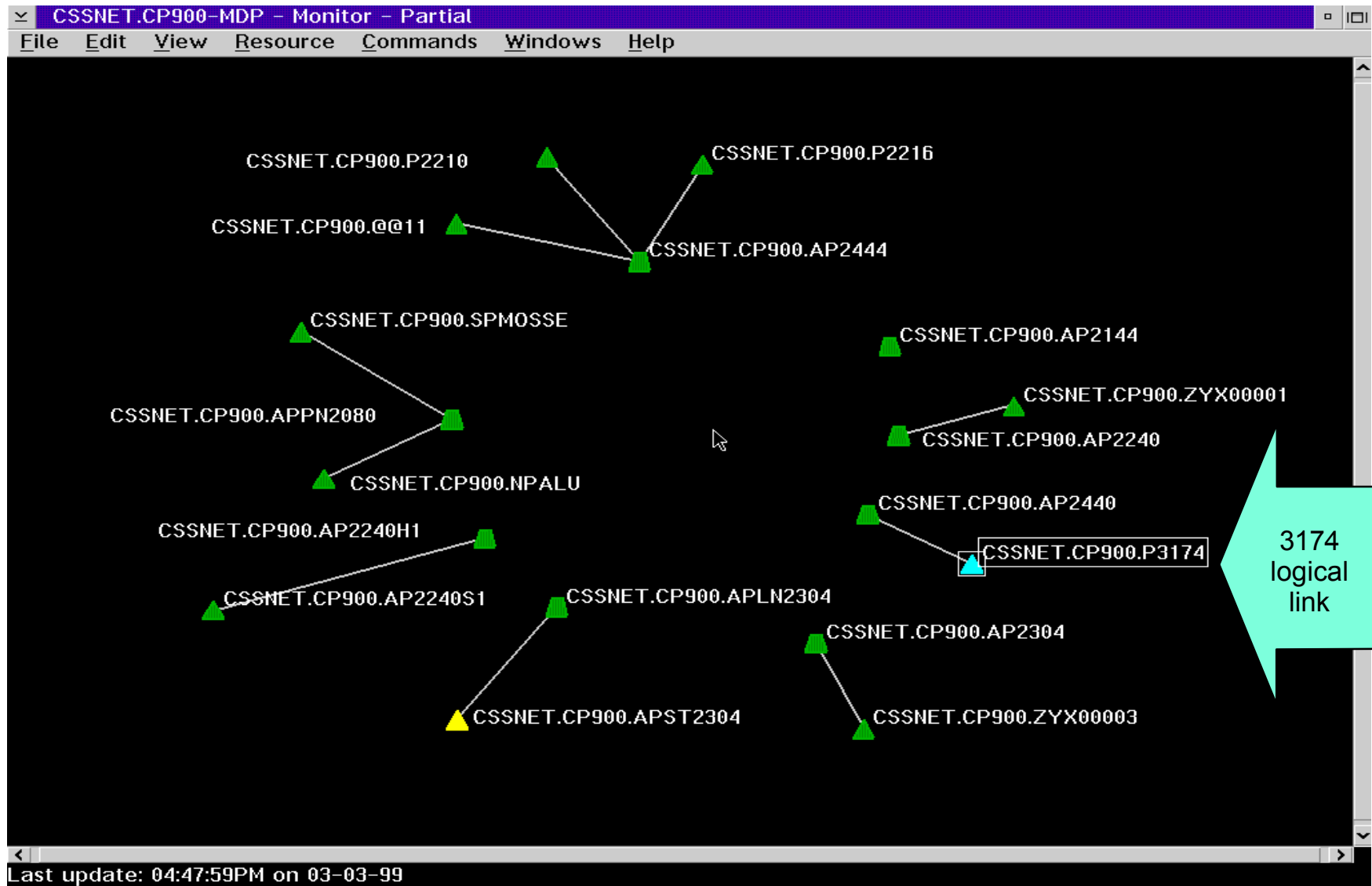
Now we reactivate the node from GMF

　　　　　　　　　　　　　　　(C) IBM CORPORATION 2000

The Command Log window at the GMF console displays the results

```
┌─┬─────────────────────────────────────────────────────────────────────────────────────┬─┬─┐
│▤│ Command Responses                                                                     │▫│□│
├─┴─────────────────────────────────────────────────────────────────────────────────────┴─┴─┤
│ Commands   Edit   Help                                                                       │
├──────────────────────────────────────────────────────────────────────────────────────────┬─┤
│   65539      03-03-1999      04:42:19PM -----------------------------------------------  │▲│
│ DUI3814I: TOPOSNA INACT,OBJECTID=0000004400000882                                        │ │
│ DUI3813I: The command TOPOSNA INACT,OBJECTID=0000004400000882 is scheduled to be run.    │ │
│ DUI3814I: FLB513I NODE CSSNET.CP900 ACCEPTED DEACTIVATE REQUEST FOR LINK 'P3174'         │ │
│ DUI3814I: FLB411I TOPOSNA INACT COMMAND COMPLETED SUCCESSFULLY                           │ │
│   65543      03-03-1999      04:45:26PM -----------------------------------------------  │ │
│ DUI3813I: The command TOPOSNA ACTIVATE,OBJECTID=0000004400000882 is scheduled to be run. │ │
│ DUI3814I: TOPOSNA ACTIVATE,OBJECTID=0000004400000882                                     │ │
│ DUI3814I: FLB511I NODE CSSNET.CP900 ACCEPTED ACTIVATE REQUEST FOR LINK 'P3174'           │ │
│ DUI3814I: FLB411I TOPOSNA ACTIVATE COMMAND COMPLETED SUCCESSFULLY                        │ │
│                                                                                          │ │
│                                                                                          │▼│
├──────────────────────────────────────────────────────────────────────────────────────────┤
│ ◄                                                                                        ► │
└────────────────────────────────────────────────────────────────────────────────────────────┘
```

(C) IBM CORPORATION 2000

VTAM displays the PU as active again

(C) IBM CORPORATION 2000

The resource changes back to Satisfactory status on GMF

(color change from blue back to green)

(C) IBM CORPORATION 2000
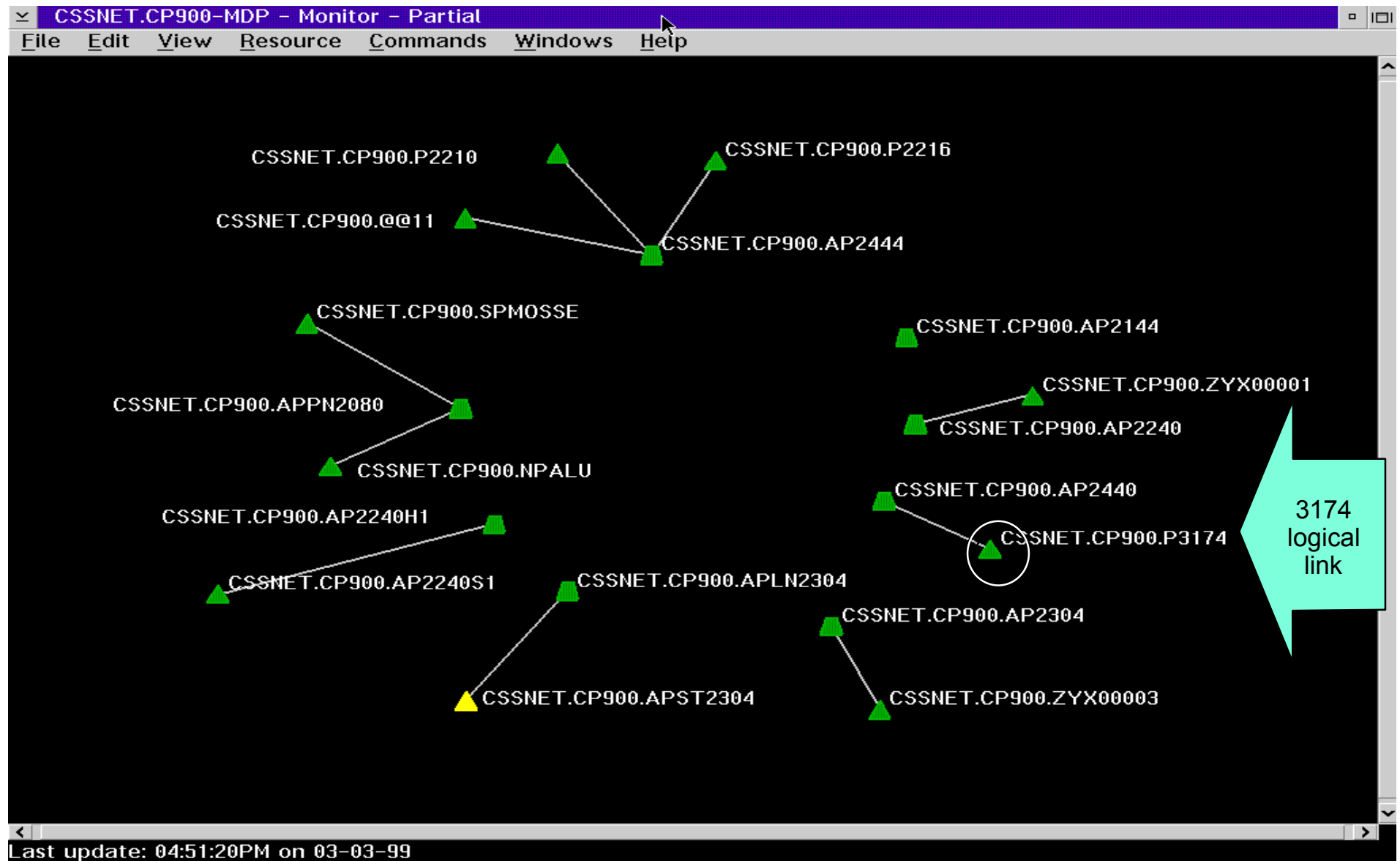
GMF 'Exception View' Example
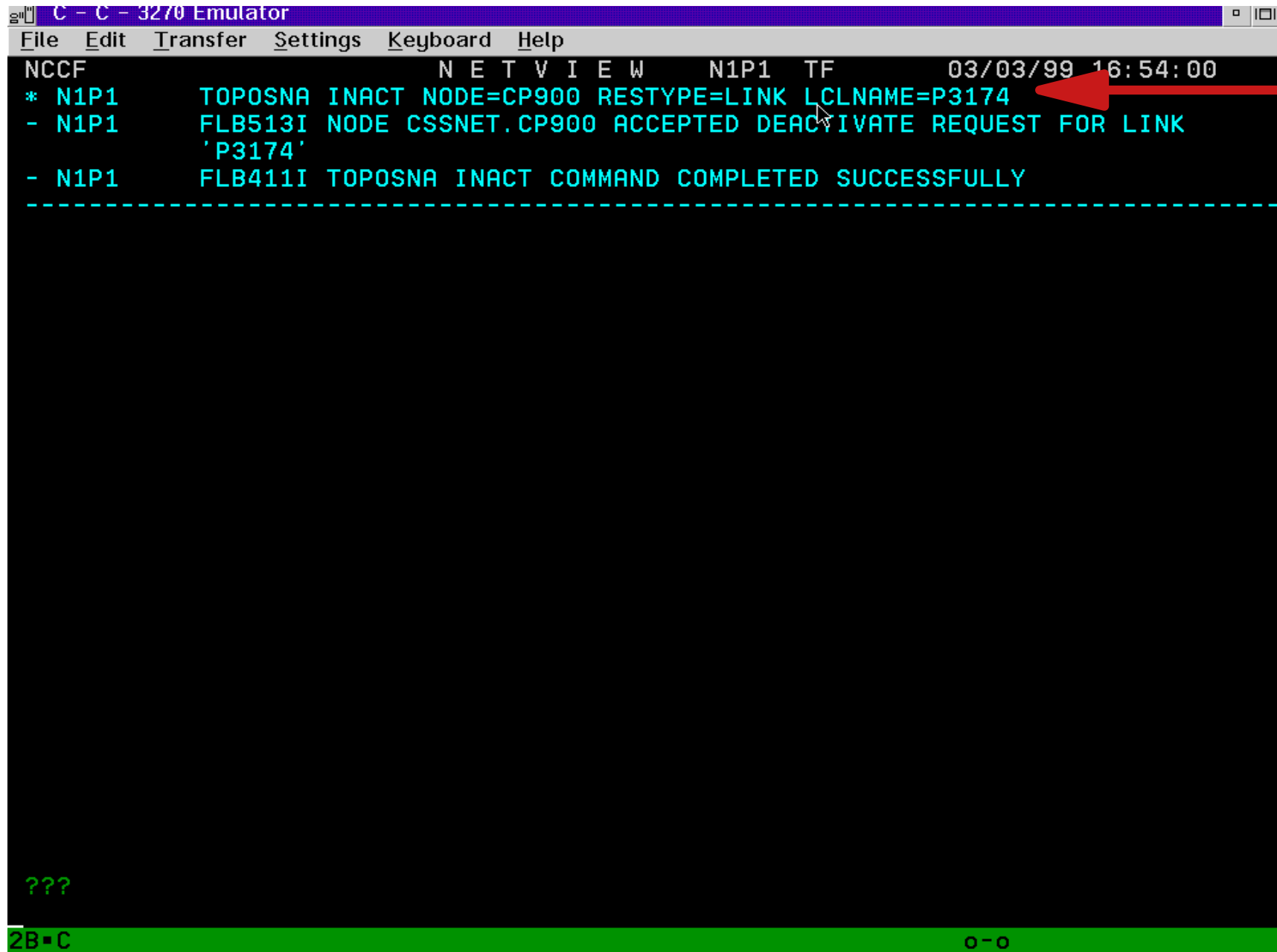
displays only resources in user-defined abnormal statuses
(also available for 3746 ports / links and other resources)
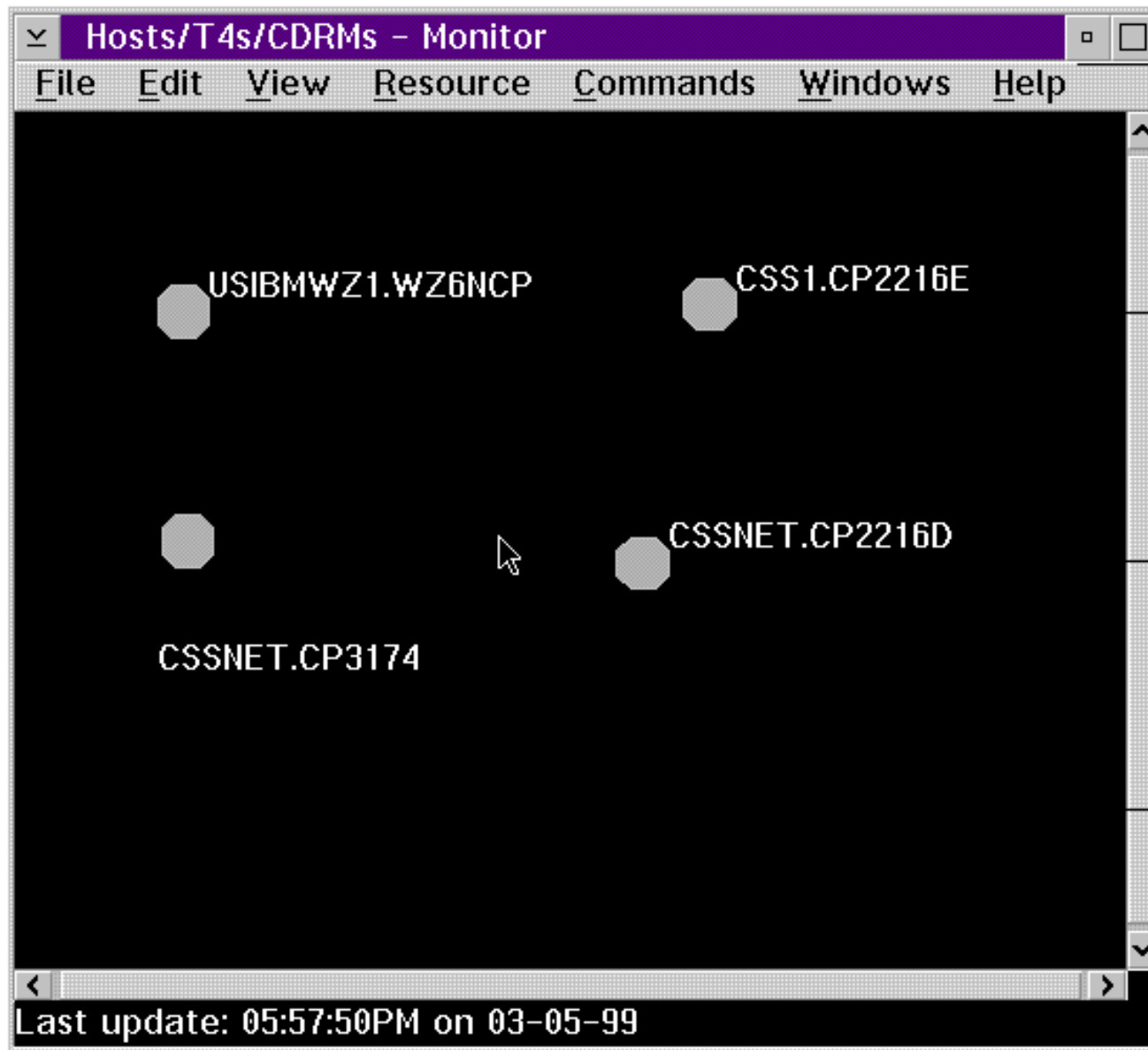
Modifying 3746 port and link status from NetView (3270 non-graphics) command line

- Graphics (GMF / NMC workstation) not required
- GMFHS address space not required
- Two methods available:
  - ▶ 'Old' way: NetView 'TOPOSNA' command
    - – Shown on next two charts
  - ▶ 'New' way: NetView 'RUNCMD' command
    - – Part of new function described in next section

Varying the logical link/PU from the NetView command lline using TOPOSNA command (1)

```
C - C - 3270 Emulator                                                    □ |□|
 File   Edit   Transfer   Settings   Keyboard   Help
 NCCF                        N E T V I E W      N1P1   TF        03/03/99 16:54:00
 * N1P1      TOPOSNA INACT NODE=CP900 RESTYPE=LINK LCLNAME=P3174
 - N1P1      FLB513I NODE CSSNET.CP900 ACCEPTED DEACTIVATE REQUEST FOR LINK
             'P3174'
 - N1P1      FLB411I TOPOSNA INACT COMMAND COMPLETED SUCCESSFULLY
 -------------------------------------------------------------------------------




 ???

 2B■C                                                         o-o
```

Varying the logical link/PU from the NetView command line using TOPOSNA command (2)

```
 C - C - 3270 Emulator
 File  Edit  Transfer  Settings  Keyboard  Help
 NCCF                        N E T V I E W    N1P1   TF        03/03/99 16:55:18
 * N1P1      TOPOSNA INACT NODE=CP900 RESTYPE=LINK LCLNAME=P3174
 - N1P1      FLB513I NODE CSSNET.CP900 ACCEPTED DEACTIVATE REQUEST FOR LINK
             'P3174'
 - N1P1      FLB411I TOPOSNA INACT COMMAND COMPLETED SUCCESSFULLY
 * N1P1      TOPOSNA ACTIVATE NODE=CP900 RESTYPE=LINK LCLNAME=P3174        ◀━━━━
 - N1P1      FLB511I NODE CSSNET.CP900 ACCEPTED ACTIVATE REQUEST FOR LINK 'P3174'
 - N1P1      FLB411I TOPOSNA ACTIVATE COMMAND COMPLETED SUCCESSFULLY
 -----------------------------------------------------------------------------



 ???


 2B■C                                                    o-o
```

3746 Support for APPN Management via NetView RUNCMD

- Available with <u>3746 Extended Functions 4</u>
  - ► See announcement 199-119 dated 5/11/1999
  - ► Enhanced in <u>3746 Extended Functions 5</u>
    - − See announcement 100-180 dated 6/13/2000
    - − Planned availability 9/2000
- <u>Over 50 NetView RUNCMD command variations</u> to manage 3746 APPN resources:
  - ► Activate / deactivate ports and links
    - − Available previously using NetView TOPOSNA command
  - ► Display details of ports and links
  - ► List / display details of all sessions
  - ► Display APPN topology and directory information
- An <u>alternative to using CCM</u> for these functions
- REXX procedures available to simplify command entry
- For more information:
  - ► GA33-0479 '374x ... NetView Console APPN Command Reference Guide'

VTAM Switched Major Node definition for our 3746-900 Service Processor

(The RUNCMDs will be addressed to the Service Processor PUname)
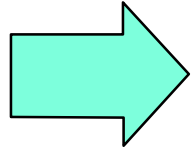
```
C - C - 3270 Emulator
File   Edit   Transfer   Settings   Keyboard   Help
NETVIEW.BRWS ------ BROWSE ETSP900   (DSIVTAM ) --- LINE 00000 TO 00014 OF 00014
                                                          SCROLL ==> CSR
----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----
******************************* TOP OF DATA ********************** DATASET:   2
ETSP900   VBUILD TYPE=SWNET                                            00010015
*  ------------------------------------------------------------------  * 00020015
*       SWNET MACRO FOR 3746-900 DLUR SUPPORTED SERVICE PROCESSOR      * 00030015
*  ------------------------------------------------------------------  * 00040015
*.                                                                       00050015
PUSP1     PU ADDR=01,CPNAME=MOSSNMVT,NETID=SYSTST,DWACT=YES,           C00060017
              DISCNT=NO,ANS=CONTINUE                                     00070015
          PATH DLURNAME=CP900,                                        C00071017
              DLCADDR=(1,C,TR),                                       C00072017
              DLCADDR=(2,I,APPN2080),                                 C00073017
              DLCADDR=(3,D,4),                                        C00074017
              DLCADDR=(4,X,400237453746)                               00075017
DLUSP1    LU  LOCADDR=03,USSTAB=USS3270A,                             C00080015
              MODETAB=AMODETAB,DLOGMOD=M2SDLCQ                          00090015
******************************* BOTTOM OF DATA **********************************




CMD==> _
TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'
2B▪C                                                          o-o
```
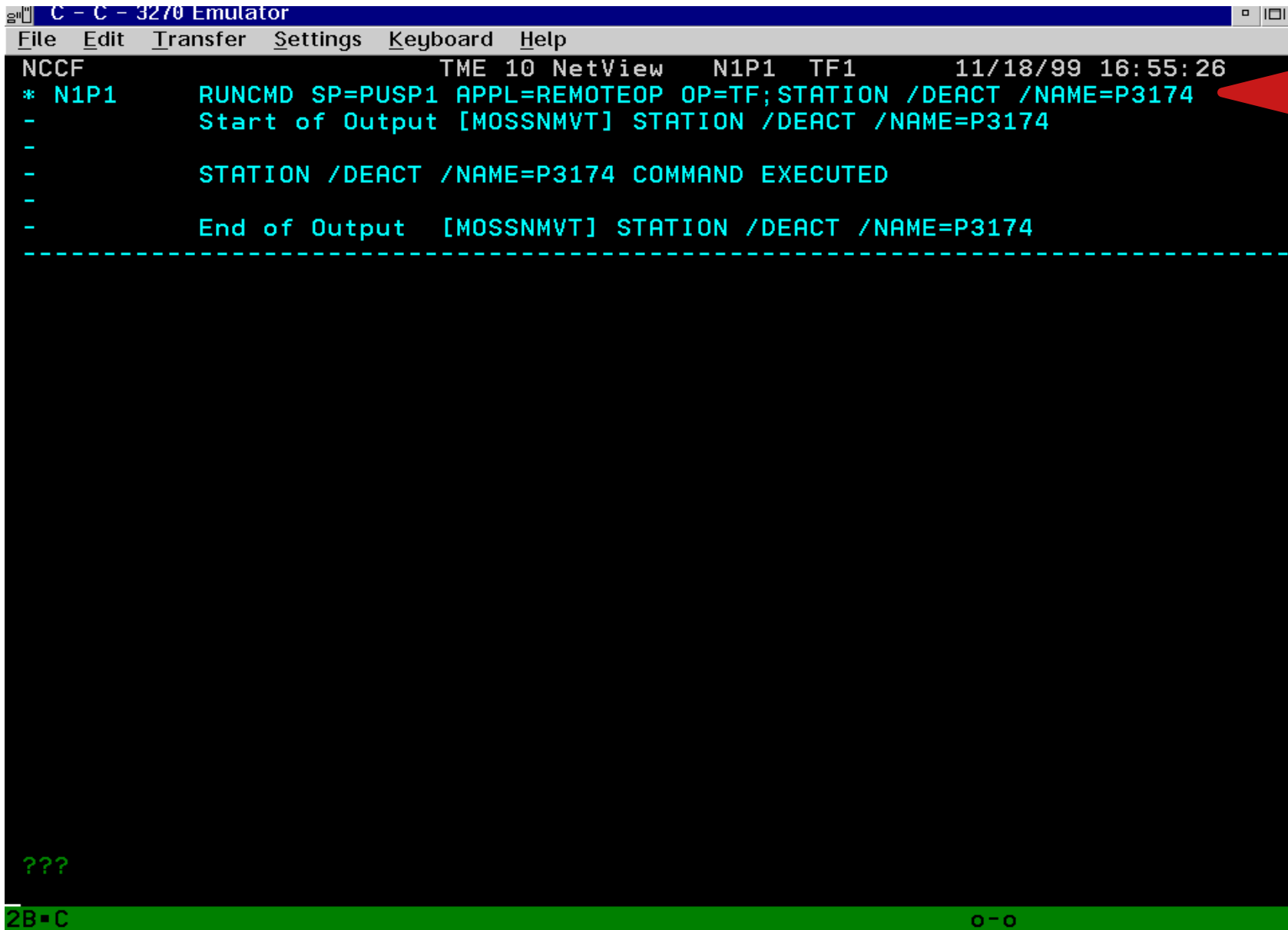
(C) IBM CORPORATION 2000

Varying the 3174 logical link/PU from the NetView command line using the new RUNCMD interface

```
C - C - 3270 Emulator
File  Edit  Transfer  Settings  Keyboard  Help
NCCF                            TME 10 NetView   N1P1  TF1      11/18/99 16:55:26
* N1P1      RUNCMD SP=PUSP1 APPL=REMOTEOP OP=TF;STATION /DEACT /NAME=P3174
-           Start of Output [MOSSNMVT] STATION /DEACT /NAME=P3174
-
-           STATION /DEACT /NAME=P3174 COMMAND EXECUTED
-
-           End of Output  [MOSSNMVT] STATION /DEACT /NAME=P3174
----------------------------------------------------------------------------------




















???


2B■C                                                             o-o
```

(C) IBM CORPORATION 2000

NetView RUNCMD support: Display 3746 Station (i.e. logical link) List


```
C - C - 3270 Emulator
File   Edit   Transfer   Settings   Keyboard   Help
NCCF                          TME 10 NetView      N1P1    TF1         11/18/00  18:26:40
* N1P1       RUNCMD SP=PUSP1 APPL=REMOTEOP OP=TF;STATION /LIST
-            Start of Output [MOSSNMVT] STATION /LIST
-
-            LINK NAME #SE    TG   PARTNER NAME        TYPE STATE         ADDRESS
-            ZYX00001   0      0                       NET  CONTACTED    01000807080701
-            ZYX00003   0      0                       NET  CONTACTED    01000807080701
-            ZYX00000   0      0                       NET  CONTACTED    01000807080701
-            ZYX00002   0      0                       NET  CONTACTED    01000807080701
-            IP2240S1   0      0                       END  CONTACTED    00010807080700
-            DL802144   0      0                       NET  CONTACTED    01500000010006
-            DL832144   0      0                       NET  CONTACTED    01530000010006
-            P2210      0      0                       NET  CONALS_PND   00500000010464
-            P2216      0     21   CSSNET.CP2216C       NET  CONTACTED    00530000010432
-            IPST2304   0      0                       END  XID_PND      00020807080700
-            FRDLCI20   0      0                       NET  CONTACTED    4114000001564f
-            FHDLCI21   0      0                       NET  CONTACTED    4115000001564f
-            DLCI20     0      0                       NET  CONTACTED    4214000001564f
-            DLCI21     0      0                       NET  CONTACTED    4215000001564f
-            @@0        0      0                       NET  CONTACTED    01320100010200
-            @@1        0      0                       NET  CONTACTED    01330100010200
-            @@2        0     21   CSSNET.CP2216B       NET  CONTACTED    00320100010420
-            AP2240S1   6     21   CSSNET.CSS1          NET  CONTACTED    000a0807080700
-            NPALU     17     21   SYSTSTAP.TESTNODP    END  CONTACTED    0020353f823f04
-            SPMOSSE    4     21   SYSTST.MOSSNMVT      END  CONTACTED    40023745374604
-            APST2304   2     21   CSSNET.CSS2          NET  CONTACTED    000c0807080700
-            P3174      0      0                       LRN  NOT_ACTIVE   c100
-
-            End of Output  [MOSSNMVT] STATION /LIST
-------------------------------------------------------------------------------
???


2B■C                                                                    o-o
```
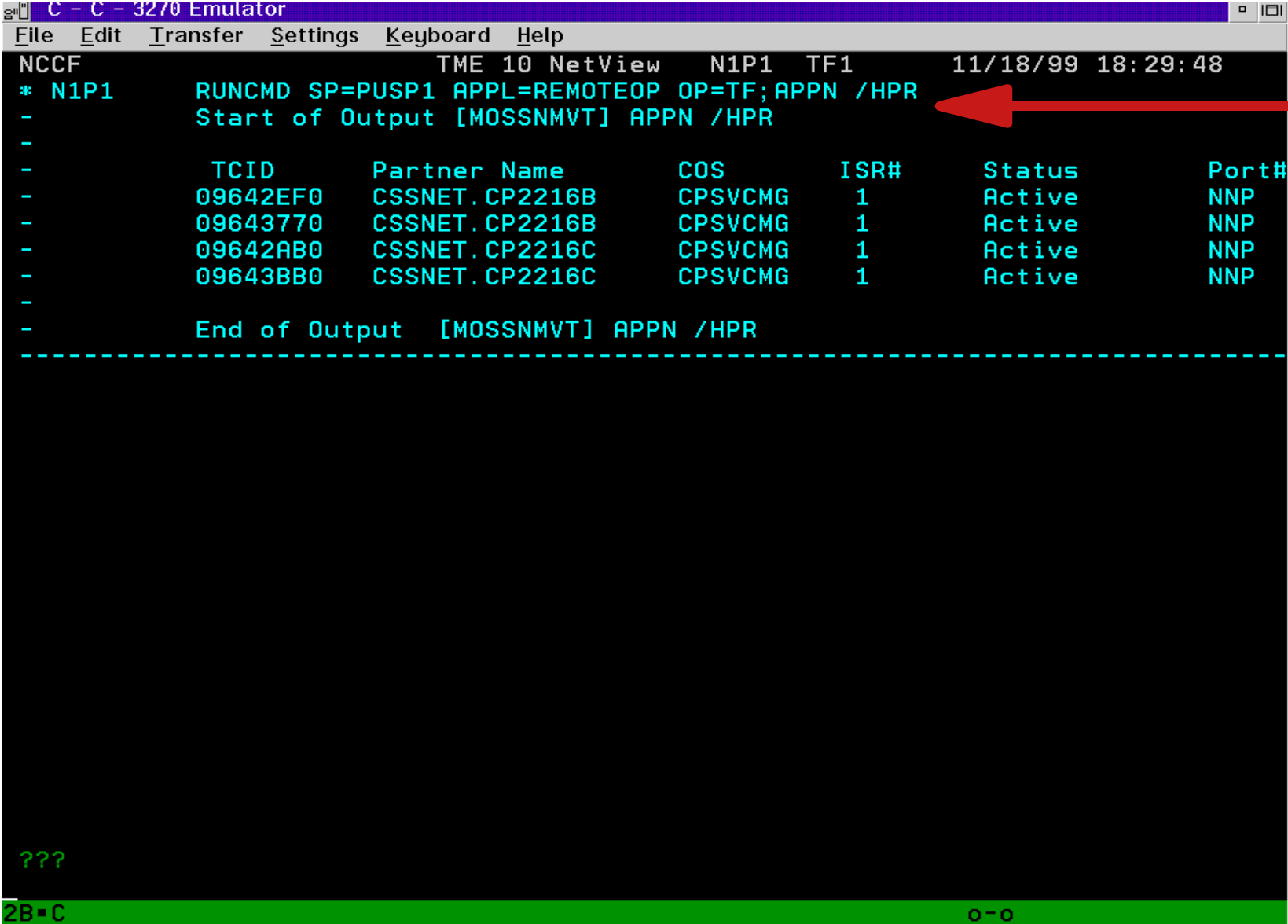
NetView RUNCMD support: Display 3746 Port List

```
C – C – 3270 Emulator
File   Edit   Transfer   Settings   Keyboard   Help

NCCF                        TME 10 NetView    N1P1   TF1        11/18/99 18:27:23
* N1P1      RUNCMD SP=PUSP1 APPL=REMOTEOP OP=TF;PORT       /LIST
-           Start of Output [MOSSNMVT] PORT /LIST
-
-           PORT /LIST COMMAND EXECUTED
-           Port Name     Port# LS#     Status           DLC Name     Type
-           AP2144        2144  0       ACTIVATED        IBMTRNET     SAF
-           AP2240        2240  1       ACTIVATED        ESCON        SAF
-           AP2240H1      2240  1       ACTIVATED        ESCON        SAF
-           AP2304        2304  1       ACTIVATED        ESCON        SAF
-           AP2440        2440  1       ACTIVATED        SDLC         LEASED
-           AP2444        2444  3       ACTIVATED        FR           SAF
-           APLN2304      2304  1       ACTIVATED        ESCON        SAF
-           APPN2080      2080  2       ACTIVATED        IBMTRNET     SAF
-           FRFH2464      2464  2       ACTIVATED        FR           SAF
-           FRFH2624      2624  1       ACTIVATED        FR           SAF
-           FRFH2656      2656  1       ACTIVATED        FR           SAF
-           IP2080        2080  0       ACTIVATED        TR_IP        SAF
-           IP2144        2144  0       ACTIVATED        TR_IP        SAF
-           IP2240        2240  1       ACTIVATED        ESCON_IP     SAF
-           IP2240H1      2240  1       ACTIVATED        ESCON_IP     SAF
-           IP2304        2304  1       ACTIVATED        ESCON_IP     SAF
-           IP2400        2400  0       ACTIVATED        PPP          LEASED
-           IP2444        2444  4       ACTIVATED        FR_IP        SAF
-           IP2496        2496  0       ACTIVATED        TR_IP        SAF
-           IPLN2304      2304  1       ACTIVATED        ESCON_IP     SAF
-           TOMAE         2560  0       ACTIVATED        IBMTRNET     SAF
-
-           End of Output  [MOSSNMVT] PORT /LIST
-------------------------------------------------------------------------------
???

2B∎C                                                           o-o
```

(C) IBM CORPORATION 2000

NetView RUNCMD support: Display 3746 HPR information
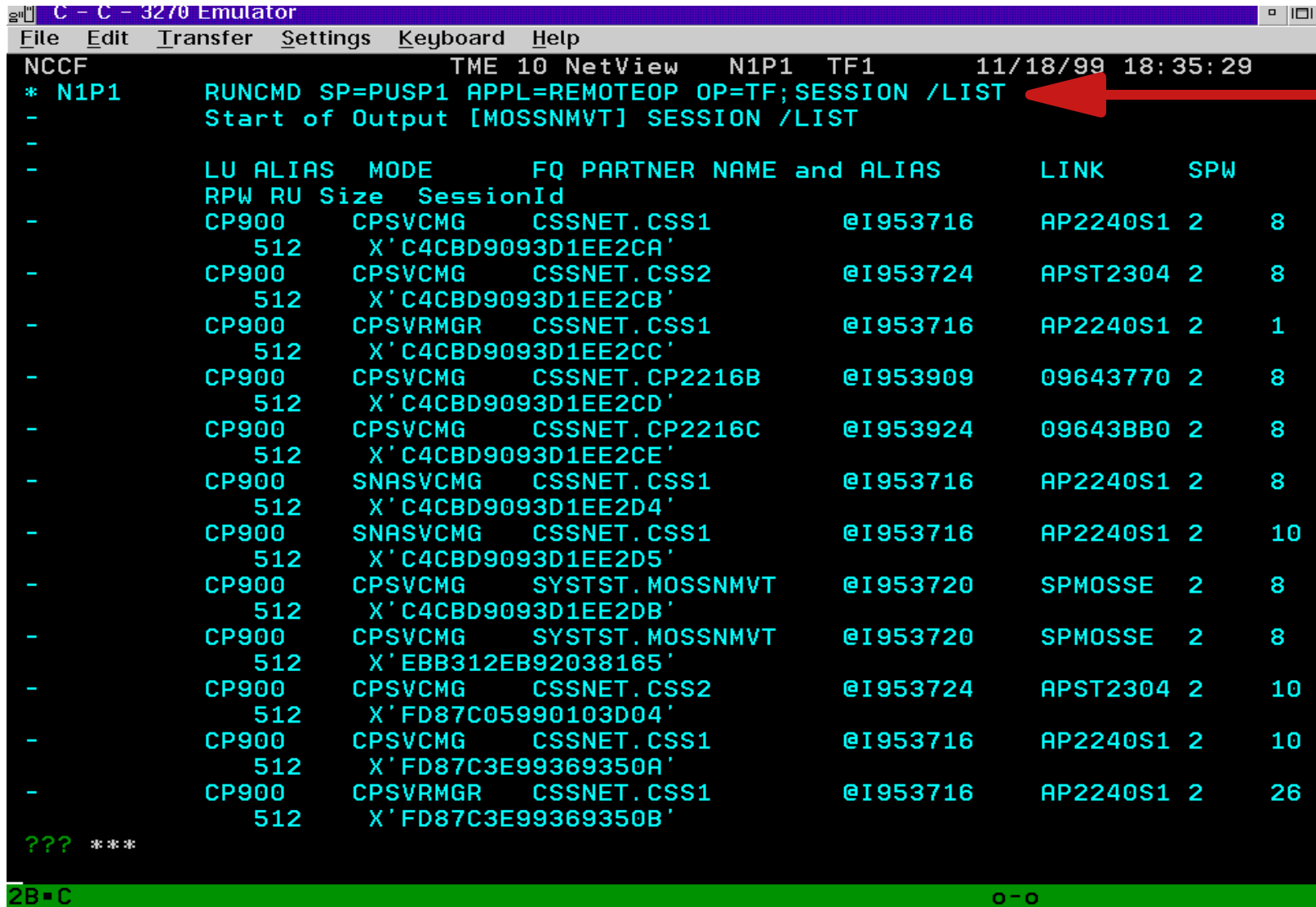
```
C - C - 3270 Emulator
 File   Edit   Transfer   Settings   Keyboard   Help
 NCCF                          TME 10 NetView    N1P1   TF1        11/18/99 18:29:48
 * N1P1      RUNCMD SP=PUSP1 APPL=REMOTEOP OP=TF;APPN /HPR
 -          Start of Output [MOSSNMVT] APPN /HPR
 -
 -           TCID       Partner Name        COS         ISR#      Status       Port#
 -          09642EF0   CSSNET.CP2216B      CPSVCMG     1         Active       NNP
 -          09643770   CSSNET.CP2216B      CPSVCMG     1         Active       NNP
 -          09642AB0   CSSNET.CP2216C      CPSVCMG     1         Active       NNP
 -          09643BB0   CSSNET.CP2216C      CPSVCMG     1         Active       NNP
 -
 -          End of Output  [MOSSNMVT] APPN /HPR
 ---------------------------------------------------------------------------------




 ???


 2B▪C                                                                        o-o
```

NetView RUNCMD support: Display 3746 Sessions

Note: This is how it looks on the NetView operator terminal:
the long output lines wrap the 80 byte screen.
See next chart for an easier to read display.

(C) IBM CORPORATION 2000

NetView RUNCMD support: Display 3746 Sessions
(browsing output in NetView network log)
Note: Session ID is also displayable by scrolling to the right

```
C - C - 3270 Emulator                                                    □ |□|

File   Edit   Transfer   Settings   Keyboard   Help

STATMON.BROWSE      ACTP   NETWORK LOG FOR 11/24/99 (99328) COLS 037 114  18:21 A
HOST: HOST16              *1*    *2*    *3*    *4*                 SCROLL ==> CSR
   ---4---+----5---+----6----+----7----+----8----+----9---+---10----+---11----
RUNCMD SP=PUSP1 APPL=REMOTEOP OP=TF;SESSION /LIST        <=========
Start of Output [MOSSNMVT] SESSION /LIST
LU ALIAS   MODE     FQ PARTNER NAME and ALIAS       LINK       SPW  RPW RU Size
CP900      CPSVCMG  CSSNET.CSS1          @I953716   AP2240S1 2    8     512
CP900      CPSVCMG  CSSNET.CSS2          @I953724   APST2304 2    8     512
CP900      CPSVRMGR CSSNET.CSS1          @I953716   AP2240S1 2    1     512
CP900      CPSVCMG  CSSNET.CP2216B       @I953909   09643770 2    8     512
CP900      CPSVCMG  CSSNET.CP2216C       @I953924   09643BB0 2    8     512
CP900      SNASVCMG CSSNET.CSS1          @I953716   AP2240S1 2    8     512
CP900      SNASVCMG CSSNET.CSS1          @I953716   AP2240S1 2   10     512
CP900      CPSVCMG  SYSTST.MOSSNMVT      @I953720   SPMOSSE  2    8     512
CP900      CPSVCMG  SYSTST.MOSSNMVT      @I953720   SPMOSSE  2    8     512
CP900      CPSVCMG  CSSNET.CSS2          @I953724   APST2304 2   11     512
CP900      CPSVCMG  CSSNET.CSS1          @I953716   AP2240S1 2   11     512
CP900      CPSVRMGR CSSNET.CSS1          @I953716   AP2240S1 2   27     512
CP900      CPSVCMG  CSSNET.CP2216C       @I953924   09642AB0 2    9     512
CP900      CPSVCMG  CSSNET.CP2216B       @I953909   09642EF0 2    9     512
End of Output  [MOSSNMVT] SESSION /LIST
```

(C) IBM CORPORATION 2000

3746 alert generation

The following three screens depict the SNA alert that NetView receives from a 3746 APPN Network Node when its link-attached PU Type 2 is powered down

NetView Alerts screen after powering off PU2 (3174)

```
C - C - 3270 Emulator

File   Edit   Transfer   Settings   Keyboard   Help

N E T V I E W              SESSION DOMAIN: N1P1      TF         03/05/99 12:03:23
NPDA-30B                          * ALERTS-STATIC *

SEL# DOMAIN RESNAME TYPE TIME   ALERT DESCRIPTION:PROBABLE CAUSE
( 1) N1P1  @AP2440   PORT 11:30 LINK ERROR:SDLC COMMUNICATIONS              %
( 2) N1P1  @AP2440   PORT 11:27 LINK ERROR:SDLC COMMUNICATIONS              %
( 3) N1P1  @AP2440   PORT 11:25 LINK ERROR:SDLC COMMUNICATIONS              %
( 4) N1P1  HANSL     COMC 11:14 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
( 5) N1P1  GRETL     COMC 11:12 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
( 6) N1P1  HANSL     COMC 10:50 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
( 7) N1P1  GRETL     COMC 10:48 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
( 8) N1P1  HANSL     COMC 10:26 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
( 9) N1P1  GRETL     COMC 10:24 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(10) N1P1  HANSL     COMC 10:02 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(11) N1P1  GRETL     COMC 10:00 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(12) N1P1  HANSL     COMC 09:38 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(13) N1P1  GRETL     COMC 09:36 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(14) N1P1  HANSL     COMC 09:14 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(15) N1P1  GRETL     COMC 09:12 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(16) N1P1  HANSL     COMC 08:50 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(17) N1P1  GRETL     COMC 08:48 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(18) N1P1  HANSL     COMC 08:26 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(19) N1P1  GRETL     COMC 08:24 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(20) N1P1  HANSL     COMC 08:02 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(21) N1P1  GRETL     COMC 08:00 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(22) N1P1  HANSL     COMC 07:38 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
(23) N1P1  GRETL     COMC 07:38 IP DYNAMIC ROUTING DATA NOT RECEIVED:TIME-OUT %
 DEPRESS ENTER KEY TO VIEW ALERTS-DYNAMIC OR ENTER A TO VIEW ALERTS-HISTORY
 ENTER SEL# (ACTION),OR SEL# PLUS M (MOST RECENT), P (PROBLEM), DEL (DELETE)

 ???
CMD==> _
2B C                                                    ^           o-o
```

NetView Recommended Action screen

```
C - C - 3270 Emulator

File   Edit   Transfer   Settings   Keyboard   Help

N E T V I E W              SESSION DOMAIN: N1P1      TF        03/05/99 12:03:44
NPDA-45A          * RECOMMENDED ACTION FOR SELECTED EVENT *      PAGE  1 OF  1
 N1P1          CP900          P3174          AP2440
              +--------+    +--------+    +--------+
 DOMAIN       |  CP    |---|  LKST  |---|  PORT  |
              +--------+    +--------+    +--------+


USER    CAUSED - REMOTE DEVICE POWER OFF
        ACTIONS - I017 - CHECK POWER

INSTALL CAUSED - NONE

FAILURE CAUSED - SDLC COMMUNICATIONS ERROR
                 POLL COUNT EXHAUSTED
        ACTIONS - I144 - IF PROBLEM REOCCURS THEN DO THE FOLLOWING
                  I120 - REVIEW LINK DETAILED DATA
                  I237 - RUN THE FOLLOWING AT THE REPORTING LOCATION IBM 3746 CO
                   MMAND : WTT WITH WRAP PLUG
                  I525 - CONTACT NETWORK ADMINISTRATOR
                  I589 - REFER TO IBM 3746 PUBLICATION NUMBER SA33-0175 FOR ADDI
                   TIONAL INFORMATION
                  I168 -  FOR IBM 3746 PRODUCT ALERT REFERENCE CODE 2217
                  I620 -  AND:
                       IBM 3746 LINE ADDRESS 2440




ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

 ???
CMD==> _
2B C                                            ^        0-0
```
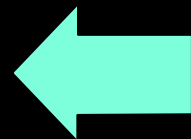
NetView Event Detail screen


```
C - C - 3270 Emulator

File  Edit  Transfer  Settings  Keyboard  Help

N E T V I E W          SESSION DOMAIN: N1P1     TF          03/05/99 12:04:17
NPDA-43S                        * EVENT DETAIL *                    PAGE  1 OF  1


  N1P1          CP900          P3174          AP2440
             +--------+     +--------+     +--------+
  DOMAIN     |  CP    |---|  LKST  |---|  PORT  |
             +--------+     +--------+     +--------+


DATE/TIME: RECORDED - 03/05 11:30    CREATED - 03/05/99 11:32:21

EVENT TYPE: PERMANENT

DESCRIPTION: LINK ERROR

PROBABLE CAUSES:
    SDLC COMMUNICATIONS
    REMOTE NODE




UNIQUE ALERT IDENTIFIER: PRODUCT ID - 3746        ALERT ID - 4B2B8A0C

ENTER A (ACTION) OR DM (DETAIL MENU)

???
CMD==> _
2B■C                                          ^              o-o
```
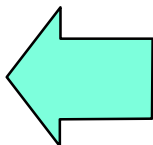
(C) IBM CORPORATION 2000

3746 SNA Alert Categories

- Communication lines
- ESCON adapter
- Token Ring adapter
- Bus adapter
- Service processor
- IP
- SDLC
- LAN external
- Frame relay
- ISDN
- X.21
- X.25
- APPN

For details see
SA33-0175
'374x Alert Reference Guide'

(C) IBM CORPORATION 2000

3746 APPN Alerts

```
Comp   Enum       Description
----   -------    ------------------------------------
 ASM  CPAM001 - Session setup failure
 CS   CPCS001 - Invalid XID received
 CS   CPCS002 - XID protocol error
 CS   CPCS003 - Wrong mode setting command received
 CS   CPCS004 - XID negotiation terminated
 CS   CPCS005 - Unable to communicate with remote node
 CS   CPCS006 - Unable to communicate with remote node
 CS   CPCS007 - XID negotiation terminated
 TRS  CPDB001 - CP-CP session failure
 TRS  CPDB002 - Topology capacity exceeded
 TRS  CPDB003 - Topology protocol error
 DS   CPDN001 - DS protocol error
 DS   CPDN002 - CP-CP session failure
 DS   CPDN003 - Unauthorized network change attempted
 SCM  CPIM001 - Out of resources
 SCM  CPIM002 - SNA protocol error
 SCM  CPIM003 - Software program error
 MS   CPMS001 - Software program error
 MS   CPMS002 - Management Services protocol error
 SS   CPSS001 - CP-CP Session Failure
 SS   CPSS002 - Unauthorized access attempted
 SS   CPSS003 - Session Services Protocol Error
 LU62 LU62001 - Received negative BIND response
 LU62 LU62002 - Sent negative BIND response
 LU62 LU62003 - Session activation rejected
 LU62 LU62004 - UNBIND request sent
 LU62 LU62005 - UNBIND request received
 DLUR CPDL001 - APPN-DLUR protocol error
 DLUR CPDL002 - APPN-DLUR configuration error
```

For details see
SA33-0175
'374x Alert Reference Guide'

Summary

- NetView/390 has significant capabilities to manage the 3746 APPN Network Node
- Use of graphics can simplify operator tasks
  - ► e.g., activate / deactivate / display link status
- NetView RUNCMD support adds function previously available only via CCM
- 3746 APPN alerts can aid in problem determination

(C) IBM CORPORATION 2000

Bibliography

- <u>374x</u>
  - ► GA27-4239 374x ... Planning Series: Management Planning
  - ► GA33-0479 374x ... NetView Console APPN Command Reference Guide
  - ► SA33-0175 374x ... Alert Reference Guide
  - ► 3746 Announcement Letter 199-119 dated 5/11/1999
  - ► 3746 Announcement Letter 100-180 dated 6/13/2000
- ■

- <u>Tivoli NetView for OS/390</u> (Release 3 pub numbers)
  - ► GC31-8665 NetView Management Console User's Guide
  - ► GC31-8234 NetView GMF User's Guide
  - ► SC31-8239 SNA Topology Manager ... Implementation Guide
  - ► LK2T-9133 Tivoli NetView for OS/390 Online Library (cd)