



IBM @server zSeries 990

ITSO - z990 Technical Workshop

z990 FICON Problem Determination

2084-z990

ITSO Poughkeepsie

06/16/03

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- FICON channel problem determination for the z990 will require that you are aware of a greater number of image customization items for the image that a z/OS system is running in, before you use the z990 HMC/SE panels to display channel or device related information
 - **CPC name**
 - The CPC object name as it will appear on the HMC that the CPC is customized to
 - **LCSS.id**
 - A 2084 Channel subsystem (at the GA2 level (10/2003)) can be logically defined with 1 or 2 LCSSs (Logical channel subsystem)
 - Up to 256 channels can be supported in LCSS 0 and upto an additional 256 channels can be supported in LCSS 1
 - The CHPID numbers used for LCSS 0 are x'00 to FF'
 - The CHPID numbers used for LCSS 1 are x'00 to FF'
 - Therefore there is a need to know if a channel that is the subject of problem determination (a CHPID number) is assigned to LCSS 0 or 1 so the correct channel (PCHID) can be identified using the LCSS.id plus the CHPID to obtain the physical channel identifier (PCHID)
 - **Logical Partition name**
 - Some z990 channel problem determination panels will require that you know which z990 processor image (Logical Partition) is using the channel (the z990 LP that you are performing FICON channel system problem determination)
 - **Logical Partition ID**
 - Some software detected I/O related error conditions (hung reserves) or Path Group ID problems will require that logical partition ID be known when you start problem determination for system error reported conditions
 - **Logical Partition MIF.id**
 - Used by the z990 logical channel subsystem and channels to identify the source of an I/O request. Failure to establish a logical path, or use of a FINISAR for a LP related problem or reviewing a FICON trace of an I/O operation will require you know the MIF.id



- Each of these items are defined as detailed below

- **CPC name**

- ▶ The CPC object name is customized to the HMC at installation time of the 2084 processor
- ▶ The 2084 processor CPC name is also defined in HCD / HCM (a CPC can only be defined once)
- ▶ HCD / HCM also requires a Proc.ID be specified for the CPC, it becomes part of the HSA processor token

- **LCSS.id**

- ▶ The number of LCSSs that a 2084 will support is defined in HCD / HCM or in:
- ▶ The IOCP RESOURCE statement
- ▶ Increasing or decreasing the number of LCSSs requires a new IOCDS and a POR
- ▶ You also define the maximum number of devices that each LCSS supports
- ▶ It is used to identify (in addition to the MIF.id) the source of an I/O operation to a CU for FICON channels (FICON channels CUADD bits 0-3)

- **logical Partition name**

- ▶ Defined in HCD / HCM Logical Partition definition or in the IOCP RESOURCE statement
- ▶ The name has to be unique for each logical partition across all partitions on a 2084
- ▶ Changing, Adding or Deleting requires a new IOCDS and a POR

- **Logical Partition ID**

- ▶ Specified in the Logical Partition image profile
- ▶ the ID number (x'00 to 3F') must be unique across all partitions on a 2084

- **Logical Partition MIF.id**

- ▶ Is defined in HCD / HCM Logical Partition definition or in the IOCP RESOURCE statement
- ▶ The number has to be unique for each logical partition across in a 2084 LCDD



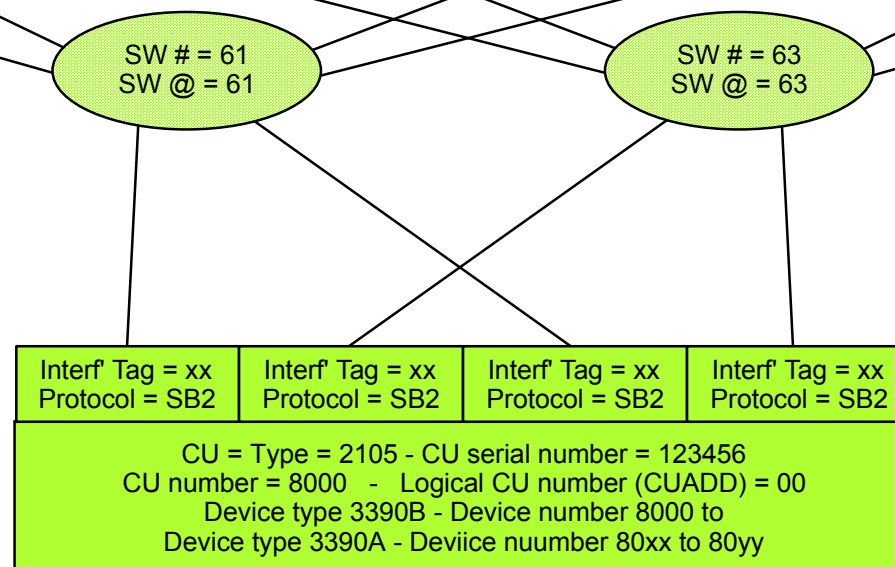
- The z990 HMC/SE I/O related panels require that you use either the PCHID number for a channel, or the LCSS.id and CHPID number for the channel
- Use the following z/OS commands to determine the processor I/O configuration
 - Use the D M=CPU command to determine
 - CPC type, serial number
 - CPC name and LCSS.id
 - Logical Partition name and MIF.id
 - Use the D M=DEV(dddd) command to determine
 - The CHPID number and path status to defined to a device
 - Note: the D M=DEV(dddd) command give the CHPID number not the PCHID number
 - Use the D M=CHP(cc) command to determine
 - The channel path type, mode z990 PCHID and neighbor connection
 - Use the z990 HMC/SE with a PCHID number or LCSS.id and CHPID number
 - Channel Groups
 - Channel analyze
 - Link analyze

z990 FICON Problem Determination - Processor Channel to CU/Device Configuration

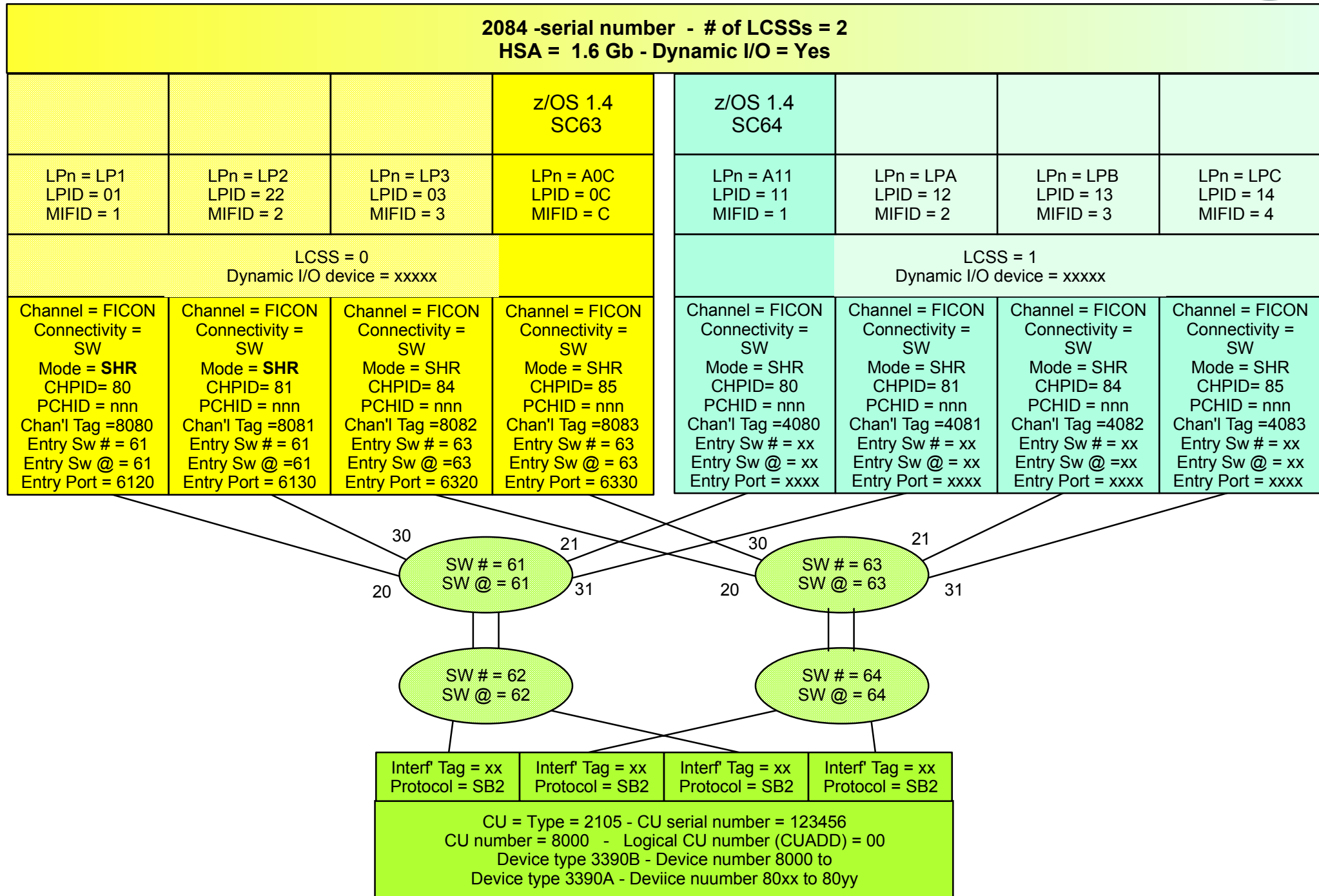


2084 -serial number - # LCSSs = 2
HSA = xxxxGb - Dynamic I/O = Yes

z/OS 1.4 SC63				z/OS 1.4 SC64			
LPn = LP1 LPID = 01 MIFID = 1	LPn = LP2 LPID = 22 MIFID = 2	LPn = LP3 LPID = 03 MIFID = 3	LPn = A0C LPID = 0C MIFID = C	LPn = A11 LPID = 11 MIFID = 1	LPn = LPA LPID = 12 MIFID = 2	LPn = LPB LPID = 13 MIFID = 3	LPn = LPC LPID = 14 MIFID = 4
LCSS = 0 Dynamic I/O device = xxxxx				LCSS = 1 Dynamic I/O device = xxxxx			
Channel = FICON Connectivity = SW Mode = SHR CHPID=80 PCHID = nnn Chan'I Tag =4080 Entry Sw # = xx Entry Sw @ = xx Entry Port = xxxx	Channel = FICON Connectivity = SW Mode = SHR CHPID=81 PCHID = nnn Chan'I Tag =4081 Entry Sw # = xx Entry Sw @ = xx Entry Port = xxxx	Channel = FICON Connectivity = SW Mode = SHR CHPID=84 PCHID = nnn Chan'I Tag =4082 Entry Sw # = xx Entry Sw @ =xx Entry Port = xxxx	Channel = FICON Connectivity = SW Mode = SHR CHPID=85 PCHID = nnn Chan'I Tag = 4083 Entry Sw # = xx Entry Sw @ = xx Entry Port = xxxx	Channel = FICON Connectivity = SW Mode = SHR CHPID=80 PCHID = nnn Tag =4080 Entry Sw # = xx Entry Sw @ = xx Entry Port = xxxx	Channel = FICON Connectivity = SW Mode = SHR CHPID=81 PCHID = nnn Tag = 4081 Entry Sw # = xx Entry Sw @ = xx Entry Port = xxxx	Channel = FICON Connectivity = SW Mode = SHR CHPID=84 PCHID = nnn Tag = 4082 Entry Sw # = xx Entry Sw @ =xx Entry Port = xxxx	Channel = FICON Connectivity = SW Mode = SHR CHPID=85 PCHID = nnn Tag = 4083 Entry Sw # = xx Entry Sw @ = xx Entry Port = xxxx



z990 FICON Problem Determination - Processor Channel to CU/Device Configuration





- z/OS commands
 - D M=IPLINFO
 - D M=CPU
 - D M=STOR
 - D M=DEV(dddd)
 - D M=CHP(cc)
 - D M=CHP
 - D IOS,CONFIG
 - D IOS,CONFIG(HSA)
 - D IOS,CONFIG(ALL)
 - ACTIVATE IODF=XX
 - HCD write IOCDS
 - HCD switch IOCDS
- HCD operations
 - 1.3 processors
 - 1.3.s LCSSs
 - 1.3.s.p Partitions
 - 1.3.s.s Channels
 - 1.4 CUs / Paths / Links
 - 1.5 Device Types / #s
 - HCD write IOCDS
 - HCD switch IOCDS
- z990 HMC / SE CPC
 - CPC Details panel
 - Channel Work Area
 - PCHID List
 - CHPID list by LCSS
 - Channel Analyze
 - Analyze Paths to Device
 - Analyze Link Status
- FICON Switch Tools
 - Display Switch
 - Switch status
 - Switch node descriptor
 - Display Port
 - Port status
 - Port node descriptor
 - Port neighbor node
 - Display switch route
 - Block port
 - Unblock port
 - Negotiate link speed



```
D M=CPU
IEE174I 02.05.56 DISPLAY M 359
PROCESSOR STATUS
ID  CPU                      SERIAL
0    +                      0C6A3A2084
1    +                      0C6A3A2084
2    -
```

```
CPC ND = 002084.305.IBM.02.000000026A3A
CPC SI = 2084.305.IBM.02.0000000000026A3A
CPC ID = 00
CPC NAME = A0C
LP NAME = A0C          LP ID =  C
CSS ID  = 0
MIF ID  = C
```

```
+ ONLINE      - OFFLINE      . DOES NOT EXIST      W WLM-MANAGED
N NOT AVAILABLE
```

z/OS 1.4 running on processor 2084 - 26A3A
CPC name = SCZP901 (not shown)
LP name= A0C
LCSS = 0
Image ID (MIF ID) = C

```
D M=CPU
IEE174I 02.03.50 DISPLAY M 887
PROCESSOR STATUS
ID  CPU                      SERIAL
0    +                      116A3A2084
1    +                      116A3A2084
2    -
```

```
CPC ND = 002084.305.IBM.02.000000026A3A
CPC SI = 2084.305.IBM.02.0000000000026A3A
CPC ID = 00
CPC NAME = A11
LP NAME = A11          LP ID = 11
CSS ID  = 1
MIF ID  = 1
```

```
+ ONLINE      - OFFLINE      . DOES NOT EXIST      W WLM-MANAGED
N NOT AVAILABLE
```

z/OS 1.4 running on processor 2084 - 26A3A
CPC name = SCZP901 (not shown)
LP name= A11
LCSS = 1
Image ID (MIF ID) = 1



D M=DEV(8000)

IEE174I 02.10.42 DISPLAY M 367

DEVICE 8000 STATUS=ONLINE

CHP	80	81	82	83	84	85	86	87
DEST LINK ADDRESS	08	0C	10	14	08	0C	10	14
ENTRY LINK ADDRESS	06	0A	0E	..	15	19
PATH ONLINE	Y	Y	Y	N	Y	Y	N	N
CHP PHYSICALLY ONLINE	Y	Y	Y	Y	Y	Y	Y	Y
PATH OPERATIONAL	Y	Y	Y	Y	Y	Y	Y	Y
MANAGED	N	N	N	N	N	N	N	N

MAXIMUM MANAGED CHPID(S) ALLOWED: 0

DESTINATION CU LOGICAL ADDRESS = 00

CU ND = 002105.000.IBM.13.000000022513

DEVICE NED = 002105.000.IBM.13.000000022513

Channel Paths to device 8000 from this image are
80 81 82 83 84 85 86 87
CHPID 80 is connected to entry port link address 06
Channel path 80 CU destination port link address 08
Being one byte link address means that the destination
and entry ports are on the same switch

D M=DEV(8000)

IEE174I 02.09.03 DISPLAY M 908

DEVICE 8000 STATUS=ONLINE

CHP	80	81	82	83	84	85	86	87
DEST LINK ADDRESS	08	0C	10	14	08	0C	10	14
ENTRY LINK ADDRESS	16	1A	15	19	17	1A
PATH ONLINE	Y	Y	Y	Y	Y	Y	N	N
CHP PHYSICALLY ONLINE	Y	Y	Y	Y	Y	Y	Y	Y
PATH OPERATIONAL	Y	Y	Y	Y	Y	Y	Y	Y
MANAGED	N	N	N	N	N	N	N	N

MAXIMUM MANAGED CHPID(S) ALLOWED: 0

DESTINATION CU LOGICAL ADDRESS = 00

CU ND = 002105.000.IBM.13.000000022513

DEVICE NED = 002105.000.IBM.13.000000022513

Channel Paths to device 8000 from this image are
80 81 82 83 84 85 86 87
CHPID 80 is connected to entry port link address 16
Channel path 80 CU destination port link address 08
Being one byte link address means that the destination
and entry ports are on the same switch



D M=CHP(80)

IEEF74I 02.13.51 DISPLAY M 915

CHPID 80: TYPE=1B, DESC=FICON SWITCHED, ONLINE

DEVICE STATUS FOR CHANNEL PATH 80

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
4EE	+	+	+	+

....

800	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

801	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

802	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

....

83D	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
-----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

83E	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
-----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

83F	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
-----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

SWITCH DEVICE NUMBER = NONE

ATTACHED ND = 006064.001.MCD.01.0000000119D3

PHYSICAL CHANNEL ID = 0160

CHPID 80 is using PCHID 161

CHPID 80 is connected to port entry link address 06

On switch MCD 6064 - 0119D3

D M=CHP(80)

IEE174I 02.11.48 DISPLAY M 911

CHPID 80: TYPE=1B, DESC=FICON SWITCHED, ONLINE

DEVICE STATUS FOR CHANNEL PATH 80

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
4EE	+	+	+	+

....

800	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

801	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

802	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

....

83D	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
-----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

83E	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
-----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

83F	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
-----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

SWITCH DEVICE NUMBER = NONE

ATTACHED ND = 006064.001.MCD.01.0000000119D3

PHYSICAL CHANNEL ID = 0161

CHPID 80 is using PCHID 161

CHPID 80 is connected to port entry link address 16

On switch MCD 6064 - 0119D3



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Screen Captures

Channel and Device Details

2084-z990

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SCZP901 - State Active - Keystrokes remote

Keystrokes Session Services Help

Groups Exceptions Activation Tasks Hardware

SCZP901 Details

Instance information

CP Status:	Operating	Activation profile:	DEFAULT
CHPID Status:	Exceptions	Last used profile:	not set via Activate
Group:	CPC	Service state:	Disabled
IOCDs identifier:	A0	Maximum CPs:	5
IOCDs name:	IODF22	Maximum ICFs:	3

Lockout disruptive tasks: ☐ Yes ☒ No

System Mode: Logically partitioned Dual AC power maintenance: Fully Redundant

Alternate SE Status: Operating CP Assist for Cryptographic Functions: Installed

Acceptable CP/CHPID status

<input checked="" type="checkbox"/> Operating -	<input type="checkbox"/> Power save -	<input type="checkbox"/> No power -
<input type="checkbox"/> Not Operating -	<input type="checkbox"/> Exceptions -	<input type="checkbox"/> Status check -
<input checked="" type="checkbox"/> Acceptable -	<input type="checkbox"/> Service Required -	<input type="checkbox"/> Degraded -

Product information

Machine type / Model:	002084 / A00-305	Manufacturer:	IBM
Machine serial:	02 - 0026A3A	CPC serial:	000020026A3A
Machine sequence:	000000026A3A	CPC location:	A19B

HMC/SE CPC details panel for SCZP901
 2084 26A3A
 Hardware model A08
 Software model 305
 ICFs quantity 3

z990 - Channels Work Area (Numbers are PCHIDs - Search for CHPID)



SCZP901: Primary Support Element Workplace (Version 1.8.0)

Views



Groups



Exceptions



Active
Tasks



Console
Actions
















Task
List



Books

SCZP901 Channels Work Area

					
0110 Online	0111 Online	0120 Online	0121 Online	0130 Online	0131 Online
Not Isolated	Not Isolated	Not Isolated	Not Isolated	Not Isolated	Not Isolated
Operating	Operating	Operating	Operating	Operating	Operating
					
0140 Online	0141 Online	0150 Online	0151 Online	0152 Online	
Not Isolated					
Not operation					
					
0153 Online					
Not Isolated					
Loss of signal					

The z990 'Channels Works Area' panel shows the channels by PCHID not by CHPID (the z900 shows channels by CHPID HMC/SE channels work area)

Use the PCHID search option to find a channel/CHPID, "Search for a PCHID from a CSS.CHP"

Once the PCHID is shown, you may select it to show its channel details panel.

If you are using this panel function as a result of z/OS messages or commands you can get the CSS.ID that z/OS is running in by use of the z/OS command 'D M=CPU' and the CHPID for a device from a z/OS message or the z/OS command 'D M=dev(dddd)

Or the HMC/SE Channel to PCHID assignment panel

z990 - Channels Work Area (Numbers are PCHIDs - Search for CHPID)



Channel to PCHID assignment						
View Search Help						
Channel location to PCHID assignment.						
Channel	Location			Physical		
Cage	Card Slot	Jack	Channel	Channel ID (PCHID)	CSS.CHPID	Card Type
A01B	LG01	J.00	Online	0100		PCI Cryptographic A
A01B	LG01	J.01	Online	0101		PCI Cryptographic A
A01B	LG02	J.00	Online	0110	0.04	Fast Ethernet PCI-X
A01B	LG02	J.01	Online	0111	1.04	Fast Ethernet PCI-X
A01B	LG03	J.00	Online	0120	0.00	Gigabit Ethernet SX
A01B	LG03	J.01	Online	0121	1.00	Gigabit Ethernet SX
A01B	LG04	J.00	Online	0130	0.82	Ficon Short Wave SX
A01B	LG04	J.01	Online	0131	1.82	Ficon Short Wave SX
A01B	LG06	J.00	Online	0140	0.87	Ficon Short Wave SX
A01B	LG06	J.01	Online	0141	1.87	Ficon Short Wave SX
A01B	LG07	J.00	Online	0150	0.40	ESCON Channel Card
A01B	LG07	J.01	Online	0151	0.44	ESCON Channel Card
A01B	LG07	J.02	Online	0152	0.57	ESCON Channel Card
A01B	LG07	J.03	Online	0153	0.5B	ESCON Channel Card
A01B	LG07	J.04	Online	0154	0.67	ESCON Channel Card
A01B	LG07	J.05	Online	0155	0.6B	ESCON Channel Card
A01B	LG07	J.06	Online	0156	0.7E	ESCON Channel Card
A01B	LG07	J.07	Online	0157	1.42	ESCON Channel Card

Use the Channel to PCHID assignment panel to list all installed channel cards and PCI Crypto cards in the I/O cages

This list shows the Channel location to PCHID assignment sorted by PCHID
Also shown is the CHPID number (if assigned)

CPC
Configuratio

hardware
essages
perating
ystem Messag
perform Model
onversion
ransmit Vital
roduct Data
iew Frame
ayout
ystem Comple
Sysplex) timer
put/output
/O) Configura
iew Hardware
onfiguration
hardware
onfiguration
etails
iew CBU
eature
formation
Channel PCHID
Assignment



Channel to PCHID assignment

View Search Help

Sort by Channel Location.
 Sort by Cage and PCHID Number.
 Sort by Card Type and PCHID Number.
 Sort by Book and jack and MBA.
 Sort by Channel State.
 Sort by PCHID Number.
 Sort by Configured CSS.CHPIDs.
 View Cage Details.

				Physical Channel ID (PCHID)	CSS.CHPID	Card Type
				0100		PCI Cryptographic A
A01B	LG01	J.01	Online	0101		PCI Cryptographic A
A01B	LG02	J.00	Online	0110	0.04	Fast Ethernet PCI-X
A01B	LG02	J.01	Online	0111	1.04	Fast Ethernet PCI-X
A01B	LG03	J.00	Online	0120	0.00	Gigabit Ethernet SX
A01B	LG03	J.01	Online	0121	1.00	Gigabit Ethernet SX
A01B	LG04	J.00	Online	0130	0.82	Ficon Short Wave SX
A01B	LG04	J.01	Online	0131	1.82	Ficon Short Wave SX
A01B	LG06	J.00	Online	0140	0.87	Ficon Short Wave SX
A01B	LG06	J.01	Online	0141	1.87	Ficon Short Wave SX
A01B	LG07	J.00	Online	0150	0.40	ESCON Channel Card
A01B	LG07	J.01	Online	0151	0.44	ESCON Channel Card
A01B	LG07	J.02	Online	0152	0.57	ESCON Channel Card
A01B	LG07	J.03	Online	0153	0.5B	ESCON Channel Card
A01B	LG07	J.04	Online	0154	0.67	ESCON Channel Card
A01B	LG07	J.05	Online	0155	0.6B	ESCON Channel Card
A01B	LG07	J.06	Online	0156	0.7E	ESCON Channel Card
A01B	LG07	J.07	Online	0157	1.42	ESCON Channel Card

Select the View option to use the 'sort by' function



Channel to PCHID assignment						
View Search Help						
Channel location to PCHID assignment.						
Channel	Location			Physical Channel ID (PCHID)	CSS.CHPID	Card Type
Cage	Card Slot	Jack	Channel			
A01B	LG01	J.00	Online	0100		PCI Cryptographic A
A01B	LG01	J.01	Online	0101		PCI Cryptographic A
A01B	LG03	J.00	Online	0120	0.00	Gigabit Ethernet SX
Z01B	LG01	J.00	Online	0300	0.01	Gigabit Ethernet SX
A01B	LG13	J.00	Online	01B0	0.02	Fast Ethernet PCI-X
A01B	LG10	J.00	Online	0180	0.03	Fast Ethernet PCI-X
A01B	LG02	J.00	Online	0110	0.04	Fast Ethernet PCI-X
Z01B	LG03	J.00	Online	0320	0.05	Fast Ethernet PCI-X
Z01B	LG02	J.00	Online	0310	0.06	Fast Ethernet PCI-X
Z01B	LG10	J.00	Online	0380	0.07	Fast Ethernet PCI-X
A01B	LG11	J.00	Online	0190	0.08	OSA-Express Token R
A01B	LG11	J.01	Online	0191	0.09	OSA-Express Token R
A01B	LG09	J.00	Online	0170	0.3E	ESCON Channel Card
A01B	LG17	J.00	Online	01E0	0.3F	ESCON Channel Card
A01B	LG07	J.00	Online	0150	0.40	ESCON Channel Card
A01B	LG15	J.00	Online	01C0	0.41	ESCON Channel Card
A01B	LG09	J.01	Online	0171	0.42	ESCON Channel Card
A01B	LG17	J.01	Online	01E1	0.43	ESCON Channel Card

This list shows the Channel location to PCHID assignment sorted by CSS.CHPID

z990 - Channels Work Area (Numbers are PCHIDs - Search for CHPID)



View Cage Details

Options Help

Select Cage, and the Side View, then press Apply.

Select Cage.

Side View

☒ Front
 ☐ Back

uu = port not LICCC enabled.

xx = port failed and switched to spare.

S = Spanned Channel. To see which CSSs are sharing the channel go back to the previous panel.

PCHID and CSS.CHPID values per card slot and jack. Second set of jack numbers are for ISC-D cards only.

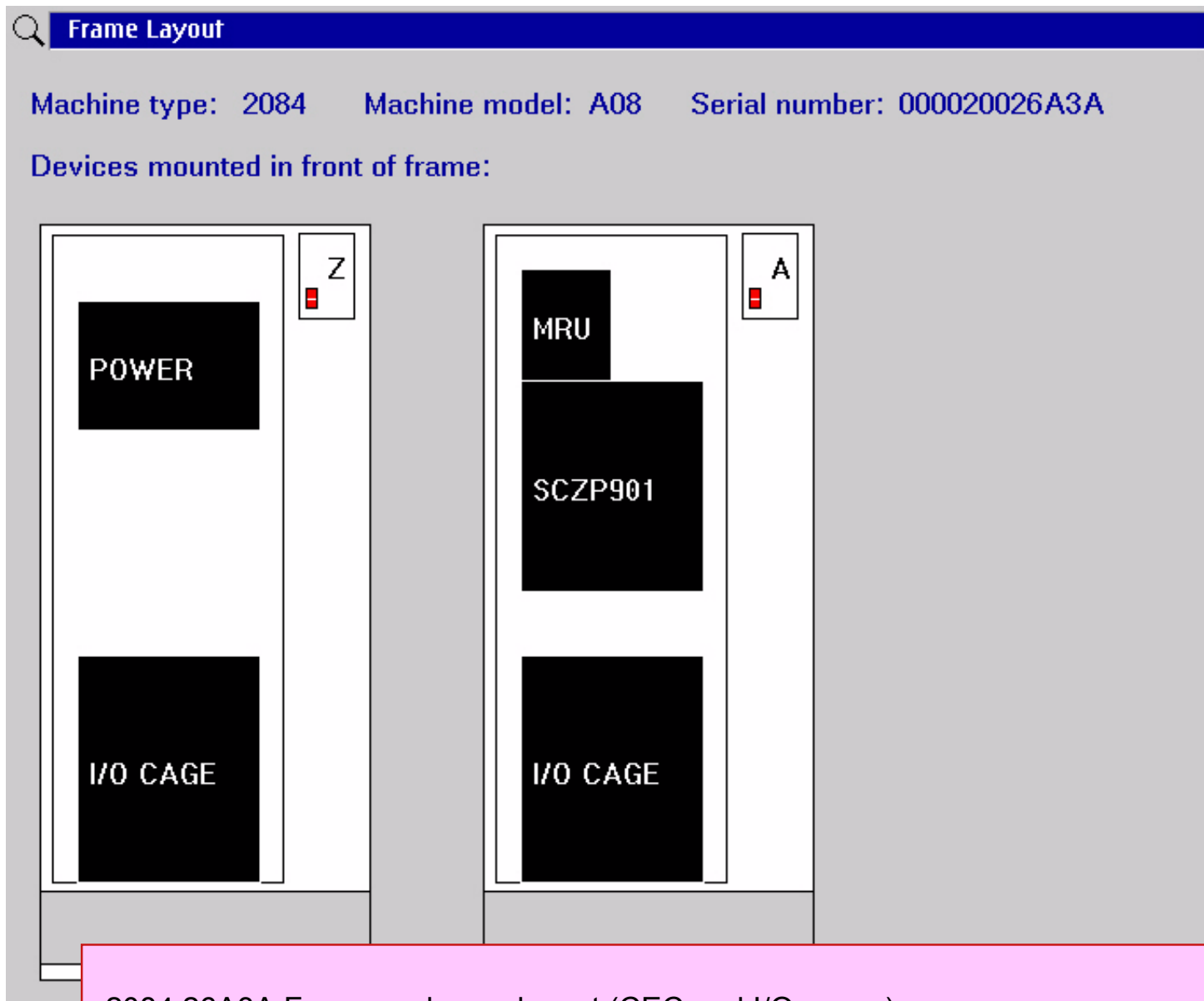
Jacks

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
ISC-D							1	0							1	0	

Slots

1															0101	0100	PCI Cryptogr
2															0111	0110	Fast Etherne
3															1.04	0.04	Gigabit Ethe
4															0121	0120	Ficon Short
5															1.00	0.00	
6															0131	0130	Ficon Short
7															1.82	0.82	
8															0141	0140	Ficon Short
															1.87	0.87	
7	uu	uu	015D	015C	015B	015A	0159	0158	0157	0156	0155	0154	0153	0152	0151	0150	ESCON Channe
			1.7E	1.7A	1.70	1.60	1.50	1.48	1.42	0.7E	0.6B	0.67	0.5B	0.57	0.44	0.40	
8															0161	0160	Ficon Short
															1.80	0.80	
																	ESCON Channe

You may also use the View option and then View the details of an I/O cage



2084 26A3A Frame and cage layout (CEC and I/O cages)



SCZP901: Primary Support Element Workplace (Version 1.8.0)

Views

Groups Exceptions Active Tasks Console Actions Task List Books

Channel Operations

Hardware Messages
 Operating System Messages
 Figure On/Off
 Service On/Off
 Show LED
 Advanced Facilities
 Reassign Channel Path
 Channel Problem Determination
 Help

SCZP901 Channels Work Area

110 Online Not Isolated Operating	0111 Online Not Isolated Operating	0120 Online Not Isolated Operating	0121 Online Not Isolated Operating	0130 Online Not Isolated Operating
131 Online Not Isolated Operating	0140 Online Not Isolated Not operational link	0141 Online Not Isolated Not operational link	0150 Online Not Isolated Operating	
151 Online Not Isolated Operating	0152 Online Not Isolated Operating	0153 Online Not Isolated Operating	0154 Online Not Isolated Operating	

Search

Search for a PCHID
 Search for PCHID from a CSS.CHP~ID

The channel work area shows the PCHID numbers for the channels NOT CHPID numbers. To find out the channel for a PCHID (either by PCHID or CSSid-CHPID) use the Channels Works Area groups search function.



SCZP901: Primary Support Element Workplace (Version 1.8.0)

From a CSS.CHPID find the PCHID

CSS.CHPID: .

Task List

Books

CHPID Operations

- Hardware Messages
- Operating System Messages
- Configure On/Off
- Release
- Show LED
- Channel Problem Determination
- Help

SCZP901 Channels Work Area

0110 Online Not Isolated Operating	0111 Online Not Isolated Operating	0120 Online Not Isolated Operating	0121 Online Not Isolated Operating	0130 Online Not Isolated Operating
0131 Online Not Isolated Operating				
0151 Online Not Isolated Operating	0152 Online Not Isolated Loss of signal	0153 Online Not Isolated Loss of signal	0154 Online Not Isolated Loss of signal	

To find out the channel (CHPID in this case) for a for a PCHID use the Channels Works Area groups search function, and on this pop up window enter the CSSid.CHPID.



SCZP901: Primary Support Element Workplace (Version 1.8.0)

Views

Groups

Exceptions

Active Tasks

Console Actions

Task List

Books

Channel Operations

Hardware Messages

Operating System Messages

Configure On/Off

Release

Service On/Off

Show LED

Advanced Facilities

Reassign Channel Path

Channel Problem Determination

SCZP901 Channels Work Area



0161 Online
Not Isolated
FCC threshold exceeded

In this example CSS.1 CHPID 80 is supported by PCHID 161 (CSS.0 CHPID 80 was the search item for the PCHID). You may then display the details panel for this PCHID (double click on the channel icon shown here) or use the channel problem determination facility to show the status and connectivity details of this channel.



SCZP901: Primary Support Element Workplace (Version 1.8.0)

Views

Groups

Exceptions

Active Tasks

Console Actions

Task List

Books

Channel Operation

Hardware Messages

Operating System Messages

PCHID161 Details

Instance information

Status: IFCC threshold exceeded	Owning image: SCZP901
Type: FICON Channel	
CSS.CHPID: 1.80	Cage/Slot/Jack: A01B LG08 J.01
All Owning Images: A11, A12, A13, A14, A15, A16, A17, A18, A19, A1A, A1B	

Acceptable status

<input checked="" type="checkbox"/> Operating - ■	<input type="checkbox"/> Loss of signal - ■	<input type="checkbox"/> Test mode - ■
<input type="checkbox"/> Suspended - ■	<input type="checkbox"/> Loss of synchronization - ■	<input checked="" type="checkbox"/> Bit error threshold exceeded - ■
<input type="checkbox"/> No power - ■	<input type="checkbox"/> Not operational link - ■	<input checked="" type="checkbox"/> IFCC threshold exceeded - ■
<input type="checkbox"/> Service - ■	<input type="checkbox"/> Sequence time-out - ■	<input type="checkbox"/> Match - ■
<input type="checkbox"/> Not defined - ■	<input type="checkbox"/> Sequence not permitted - ■	<input type="checkbox"/> Stopped - ■
<input checked="" type="checkbox"/> Definition error - ■	<input type="checkbox"/> Terminal condition - ■	<input type="checkbox"/> I/O Suppressed - ■
		<input type="checkbox"/> Fabric login sequence failure - ■
		<input type="checkbox"/> Port login sequence failure - ■
		<input type="checkbox"/> State change registration failure - ■
		<input type="checkbox"/> Invalid attachment failure - ■



0161 Online
Not Isolated

IFCC threshold exce

In this example CSS.0 CHPID 80 is supported by PCHID 161.

Other details:

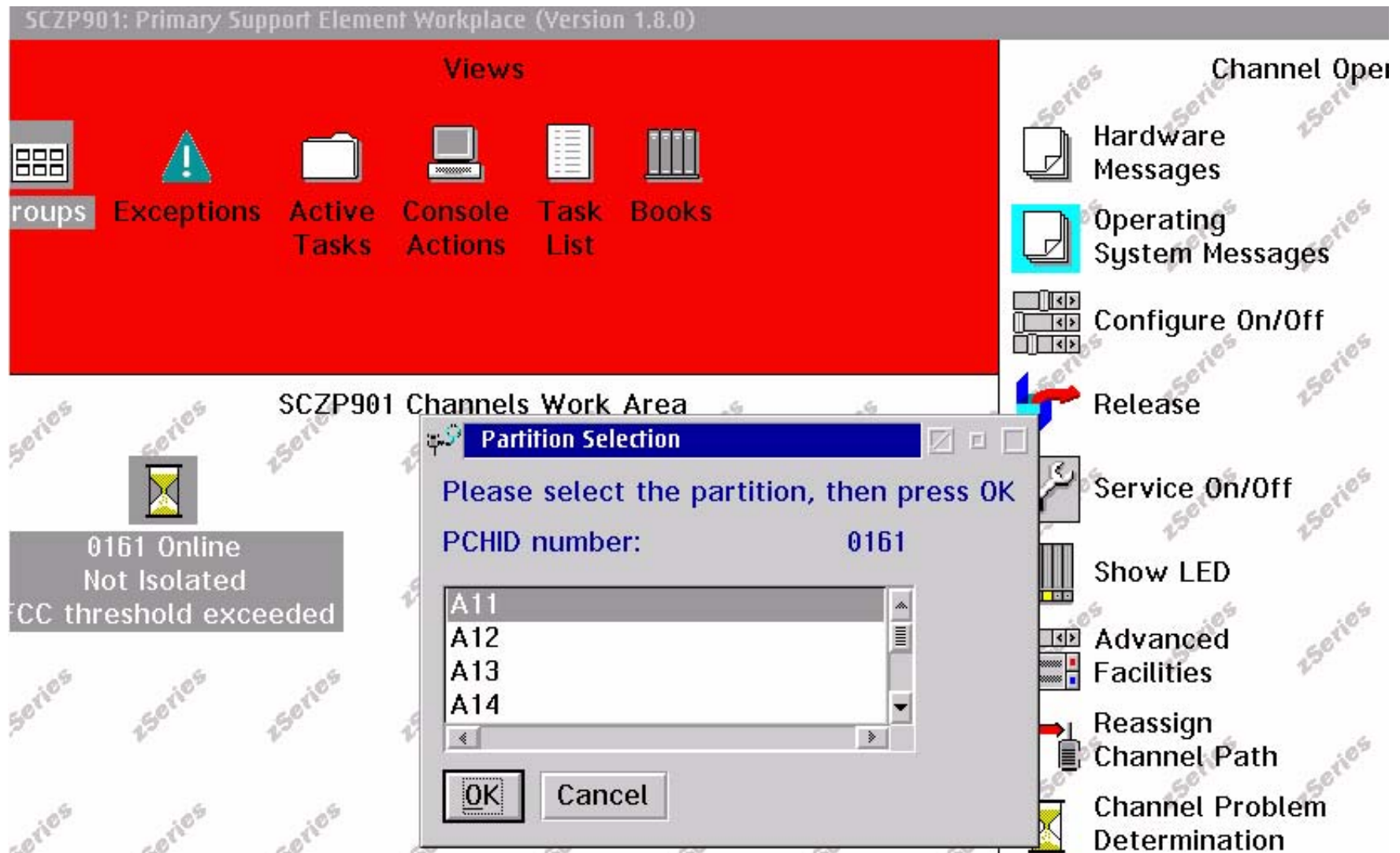
Status

Type of channel

CSSid and CHPID

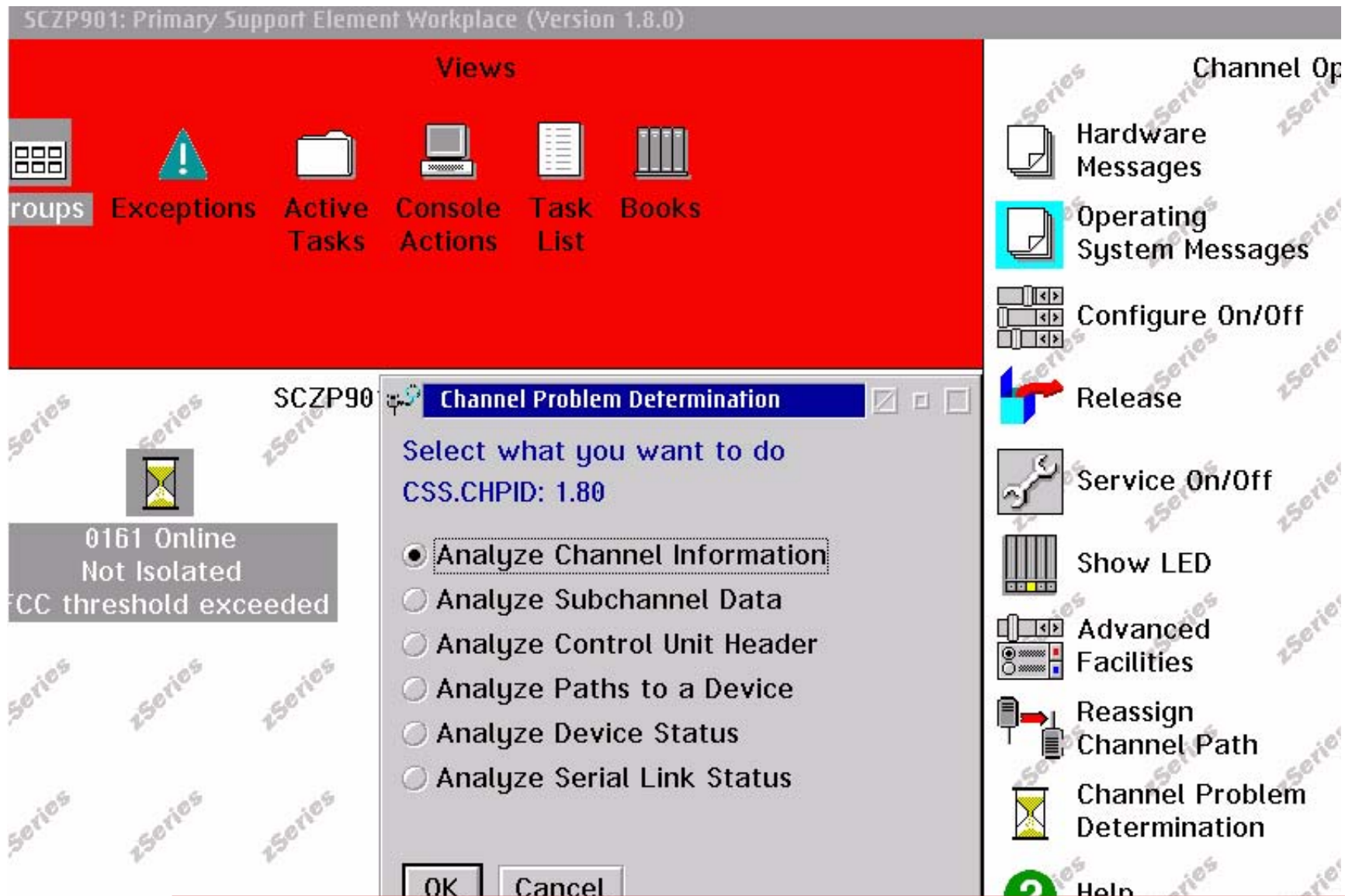
Physical location

LPARs in the CHPIDs Candidate list



Once having found the channel you may invoke the Channel Problem determination function for that channel.

If the channel is defined as Shared (or in future Spanned), you will need to also selection the logical partition (Logical Partition name)



Select the required Channel Problem determination function



Analyze Channel Information			
Channel type: Fibre FC		Hardware Type: 0B	
Definition information		Hardware Sub Type: 00	
Partition ID: 11		2Byte Control Unit Link Addr defined: No	
MIF Image ID: 1		FICON Cascade switch definition	
Channel mode: Shared		Once having located the PCHID / CHPID on the Channels Work Area panel you may use the Channel Problem Determination function (channel PD) to display the more information about the channel.	
CHPARM: 00			
CSS.CHPID: 1.80			
PCHID: 0161			
Switch number: 61		CVC CCC threshold: 5	
Switch number valid: 1		IECC threshold: 0	
State: Online Status: IFCC Thresh Image chnl state: Online Image chnl status: IFCC Thresh Error code: 00 Ber inbound: 0 Ber outbound: 0		Channel link address: 001600	
		Temp error threshold: 04	
		Suppress: 0000000000000000	
		SAP affinity: 00	
		Connection Rate: FICON 1.75 at 2Gb	
Node type: Self		Node type: Attached	
Node status: Valid		Node status: Valid	
Flag/Parm: 10000780		Flag/Parm: 00200A16	
Type/Model: 002084-305		Type/Model: 006064-001	
MFG: IBM		MFG: MCD	
Plant: 02		Plant: 01	
Seq. number: 000000026A3A		Seq. number: 0000000119D3	
Tag: 4080		Tag: 0012	
Worldwide Node name: 5005076400C00002		Worldwide Node name: 1000080088A0DCDA	
Worldwide Port name: 5005076401403C55		Worldwide Port name: 2016080088A0DCDA	

z990 - Channels Work Area (Numbers are PCHIDs - Search for CHPID)



Analyze Subchannel Data			
Absolute addr:	000000008804EF00	lrpt parm:	00F16AB8
		ISC:	5
Subch no.:	13E0		
Device no.:	8000	Enabled:	1
Unit addr:	00		
		Meas mode:	11
		Multipath:	1
Partition ID:	11	Timing:	1
MIF Image ID:	1	LPM:	11111100
		LPE:	01111100
		PNOM:	00000000
Dev no. valid:	1	LPUM:	00100000
QDIO supt:	0	PIM:	11111111
QDIO mode:	0	POM:	11111111
IQDIO support:	0	PAM:	11111111
		Meas index:	6497
Path		Meas format:	1
Pref def'd:	0	Extended meas:	1
Pref path:	0	Meas block addr:	000000000277F840
Subch active:	0		
CU header ptr:	000000005790CF00	Storage key:	0
CU hdr ext ptr:	0000000058952300	Status verify:	1
Ch pgm addr:	4060F198	Intf timeout:	0
Start T/S:	DA47	UA cmpr enable:	0
Candidates:	11111100	Concurrent sense:	1
Dev busy msk:	00000000		
Key:	00		
S, L, DCC, F:	00001		
ILSM:	0		
P,I,A,U,Z,E,N:	1000000		
		CSS.CHPID0,PCHID:	1.80, 0161
		CSS.CHPID1,PCHID:	1.81, 01A1
		CSS.CHPID2,PCHID:	1.82, 0131
		CSS.CHPID3,PCHID:	1.83, 01D1
		CSS.CHPID4,PCHID:	1.84, 03A1
		CSS.CHPID5,PCHID:	1.85, 0331
		CSS.CHPID6,PCHID:	1.86, 0341
		CSS.CHPID7,PCHID:	1.87, 0141
		Function cntl:	000
		Activity cntl:	0000000
		Status cntl:	00000
		I/O priority queueing:	00000000
		CU busy mask:	00000000
		Switch busy mask:	00000000
		Allegiance:	11111111
		ERW bit:	0
		Retry CCW adr/ERW:	00000000
		Active CCW addr + 8:	4060F1A0
		Cmnd/Dev status:	0C
		Flgs/Subch status:	00
		Residual count:	0000
		Dev con time/ESW0:	00200001
		ECW0:	00000000
		ECW1:	00000003
		ECW2:	00000000
		ECW3:	00000000
		ECW4:	00000000
		IFCC count:	4
		Init/Pri time stp:	DA47

Subchannel information for device C000 in LCSS.0 defined to use CHPID DC.
Channel path information for this device includes the: CSSId.CHPID and the PCHID



Analyze Paths to a Device

Subchannel number: 13E0 Partition ID: 11

Device number: 8000 CSS ID: 1

Unit address: 00

Logpath	Avail	CHPID	Switch	Switch Number	Linkaddr	Cuadd
0	Yes	80	Yes	61	..08..	00
1	Yes	81	Yes	61	..0C..	00
2	Yes	82	Yes	61	..10..	00
3	Yes	83	Yes	61	..14..	00
4	Yes	84	Yes	62	..08..	00
5	Yes	85	Yes	62	..0C..	00
6	Yes	86	Yes	62	..10..	00
7	Yes	87	Yes	62	..14..	00

Displaying the paths to a devices shows (for a device in a LP in a LCSS)
 All the defined path CHPIDs (they are in the same LCSS),
 In this case all the paths are switched paths
 The defined switch number for each path
 The defined destination link address
 The defined logical control unit address (CUADD)



Select Link and Control Unit Address

Select a link address and control unit address combination

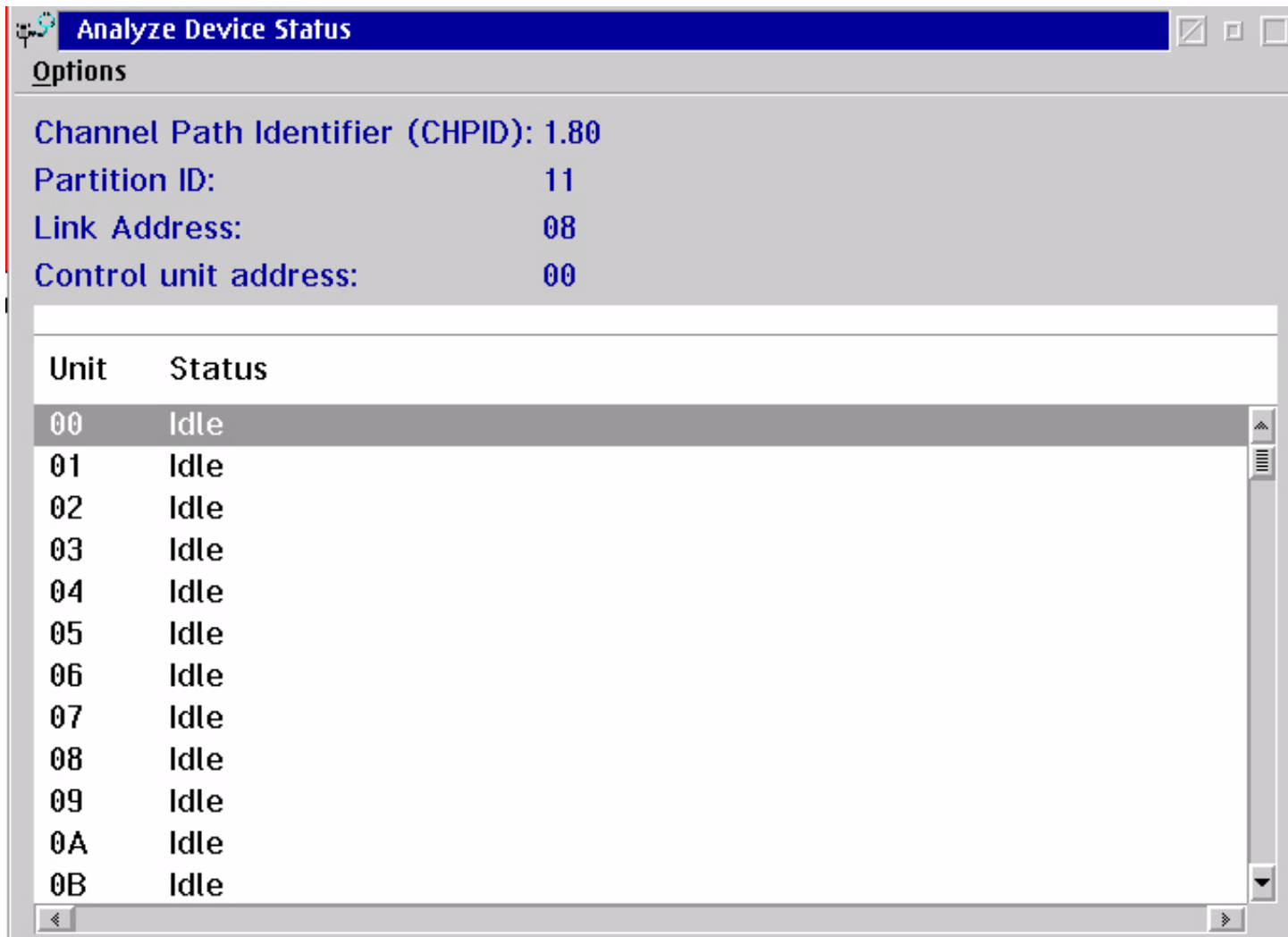
Channel Path Identifier (CHPID): 80

Link Address	Control Unit Address
08	0
08	1
08	2
08	3
0A	C
1A	11
1A	12
1A	13

2105 Paths to CU Address 0, 1, 2 and 3

FCTC path to LCSS0 - logical partition MIF.ID C

FCTC path to LCSS1 - logical partition MIF.ID 11, 12 and 13



Unit	Status
00	Idle
01	Idle
02	Idle
03	Idle
04	Idle
05	Idle
06	Idle
07	Idle
08	Idle
09	Idle
0A	Idle
0B	Idle

Analyze device status for all unit addresses on the
CPC - LCSS.CHPID - Partition - Link - Logical CU



Analyze Serial Link Status		
MIF Image ID: 1	Switch number: 61	
CHPID: 1.80	Switch number valid: 1	
Channel type: FC	Channel link address: 16	
Link Addr	CU Addr	Status
08	00	Link Level Error - Channel Detected Error
08	01	Link Level Error - Channel Detected Error
08	02	Link Level Error - Channel Detected Error
08	03	Link Level Error - Channel Detected Error
0A	0C	Initialization Complete
1A	11	Initialization Pending
1A	12	Initialization Complete
1A	13	Initialization Complete

No change, other than the CHPID value is shown as CSSid. CHPID



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Z990 FICON Problem Determination End of Presentation

2084 - z990
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