



G29

FICON Problem Determination for zSeries

M.G. McCullough

**zSeries Expo**

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Miami, FL

# Objectives

- \*Look at z/990 & z/890 CSS
- \*How to establish a CPC session
- \*What is a CPC session
- \*How to Navigate on the SE panels
- \*How to initiate channel P.D. to an ESCON channel
- \*How to navigate on panels on an Inrange Ficon sw
- \*How to navigate on panels on a McData FICON sw

# z990 I/O System Design Overview

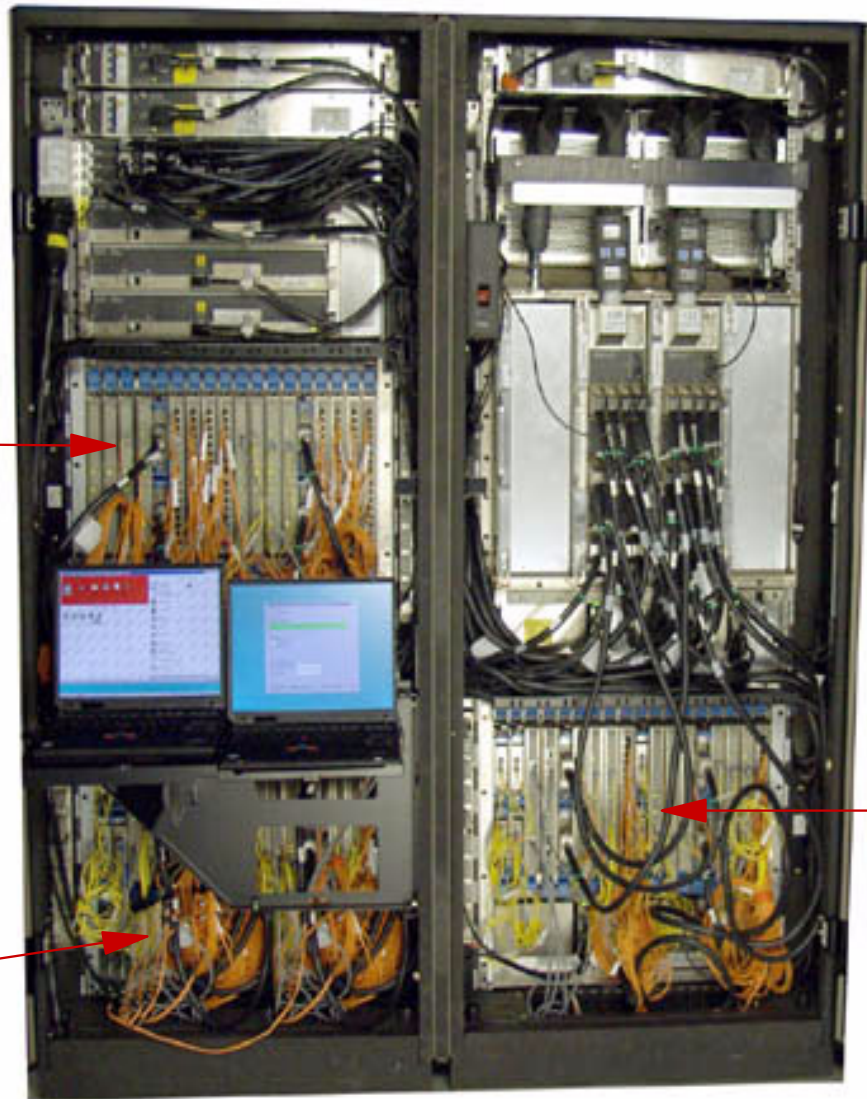
**The z990 I/O system design provides flexibility, highest availability, and performance**

- Higher bandwidth
  - z990 has up to four times of I/O bandwidth of the z900
- Greater Connectivity
  - Up to four times the number of channels of the z900 with a wide range of connectivity
- Concurrent I/O upgrades
  - LIC enabled I/O ports or physical installed I/O cards
- Dynamic I/O configuration
  - Add and remove channel paths and I/O
- ESCON port sparing

# The z990 I/O Cages

I/O cage  
# 3  
Optional

I/O cage  
# 2  
Optional



I/O cage  
# 1

Z Frame

A Frame

# z990 Channel Subsystem Structure

**The z990 channel subsystem structure supports up to:**

- 1024 ESCON channels
- 1024 Channel Path IDs
- Four Logical Channel Subsystems
  - 256 CHPIDs per LCCS
  - Spanned Internal and external CHPIDs
- Forty-eight 2 GB STIs
  - Twelve STIs per book
- Three I/O cages
  - One I/O cage in A frame
  - Up to two optional I/O cages in Z frame
- Twenty-eight I/O slots for I/O cards
  - Supports up to seven I/O domains
    - Each I/O domain has up to four I/O cards

# z890 I/O System Design Overview

**The z890 I/O system design provides flexibility, high availability, and performance as compared to other Servers**

- Same I/O cage as the z990
- Higher bandwidth
  - z890 has over twice the I/O bandwidth of the z800
- Greater Connectivity
  - Close to twice the number of channels of the z800 with a wide range of connectivity
    - 420 ESCON channels compared to 240 on the z800
- Concurrent I/O upgrades
  - LIC enabled I/O ports or physical installed I/O cards
- Dynamic I/O configuration
  - Add and remove channel paths and I/O
- ESCON port sparing

# PCHID Assignment to I/O cage Slots

**Every I/O cage slot has 16 (xF) physical channel IDs assigned**  
**Most I/O cards use a PCHID and a CHPID number**

I/O cage slots	PCHID numbers		
	1st I/O cage	2nd I/O cage	3rd I/O cage
Front slots 01 to 18	100 to 1FF	300 to 3FF	500 to 5FF
Rear slots 19 to 32	200 to 2BF	400 to 4BF	600 to 6BF

- Actual PCHID used is determined by what card type is plugged into the I/O slot
- PCHIDs are identified in PCHID report from machine configuration order
- Customer maps PCHID to CHPID number using channel mapping tool
- PCHIDs are used for various purposes - physical location, I/O configuration definition process, ESCON channel sparing

# Single Object Operations Guidelines

- Single Object Operations is also called a CPC Session when a CPC object is used
- DCAF is used to establish a CPC session
  - Distributed Console Access Facility (DCAF) is an OS/2 application that is used to take control of the target PC - the SE is this case
- Use the Single Object Operations task only when the task is not available on the HMC or for problem determination
- A CPC object is required to initiate the Single Object Operations task
- Always log off to exit the CPC session



# Single Object Operations - CPC Session

A Single Object Operations session is used primarily for problem determination

- I/O or channel problem determination
- Determine the cause of an exception condition
- Display/alter storage, registers or PSW
- Perform manual POR
- Enable TOD
- View IOCDs information
- Storage - HSA size and LPAR storage assignments

# Single Object Operations Task

The screenshot shows the LABHMC4 Hardware Management Console Workplace (Version 1.5.1) interface. The top bar is green and contains a 'Views' section with icons for Groups, Exceptions, Active Tasks, Console Actions, Task List, and Books. The 'Task List' icon is highlighted. Below this is the 'Defined CPCs Work Area' showing three CPC objects: R2C0, R4C1, and R5C0. An arrow points from the R5C0 object to a 'Single Object Operations Task Confirmation' dialog box. The dialog box has a blue title bar and contains the following text: 'About to establish a session with a single CPC console. Do you want to continue with this task? Object names'. Below the text is a list box containing 'R5C0'. At the bottom of the dialog are three buttons: 'Yes', 'No', and 'Help'.

LABHMC4: Hardware Management Console Workplace (Version 1.5.1)

Views

Groups Exceptions Active Tasks Console Actions Task List Books

Defined CPCs Work Area

R2C0 R4C1 R5C0

CPC Recovery

Hardware Messages ? Help

Operating System Messages

Single Object Operations

Single Object Operations Task Confirmation

About to establish a session with a single CPC console.  
Do you want to continue with this task?

Object names

R5C0

Yes No Help

- Place the CPC Recovery task list in the Task Area
- Open a CPC Group
- Drag and drop the CPC object on the Single Object Operations task
- Confirmation is required
- SE workplace will be displayed

# Support Element Workplace

R5C0: Support Element Workplace (Version 1.5.1)

Views

Groups Exceptions Active Tasks Console Actions Task List Books

Groups Work Area

CPC Images

- The HMC has control of this SE
- The SE Workplace is displayed
- The Groups view is opened
- The Daily task list is in the Task Area
- CPC and Images groups in the Work Area
- User Groups may be built
- System Programmer ID logged on in these examples

Daily

Hardware Messages

Operating System Messages

Activate

Reset Normal

Deactivate

Grouping

Activity

Help

Display a group's contents in the work area by double-clicking a group icon.

# CHPID Operations Task List

The screenshot displays the 'R5C0: Support Element Workplace (Version 1.5.1)' interface. The top bar is blue with the title. Below it, there are two main sections. The left section is titled 'Views' and contains icons for 'Groups', 'Exceptions', 'Active Tasks', 'Console Actions', 'Task List', and 'Books'. The 'Groups' icon is highlighted. Below this is the 'Groups Work Area' which shows 'CPC' and 'Images' icons. The right section is titled 'CHPID Operations' and contains a list of tasks: 'Hardware Messages', 'Operating System Messages', 'Configure On/Off', 'Release', 'Service On/Off', 'Reset I/O Interface', 'Advanced Facilities', 'Reassign Channel Path', 'Channel Problem Determination', and 'Help'. The 'Help' icon is a green circle with a white question mark.

Views

Groups Exceptions Active Tasks Console Actions Task List Books

Groups Work Area

CPC Images

- The CHPID Operations task list is SE unique and requires a CHPID for most of the tasks
- Configure On/Off and Reassign Channel Path tasks are available on the HMC
- Channel Problem Determination is the entry point for I/O for channel PD

CHPID Operations

Hardware Messages

Operating System Messages

Configure On/Off

Release

Service On/Off

Reset I/O Interface

Advanced Facilities

Reassign Channel Path

Channel Problem Determination

Help

Display a group's contents in the work area by double-clicking a group icon.

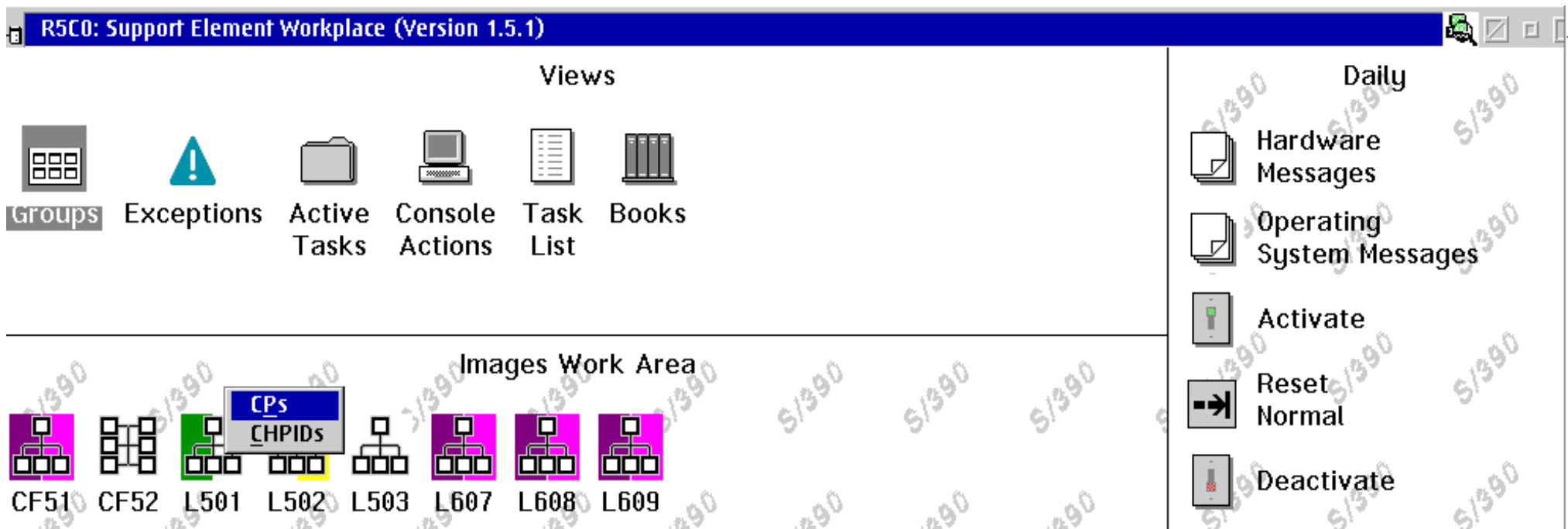
# CPs or CHPID Access

The screenshot shows the 'R5C0: Support Element Workplace (Version 1.5.1)' interface. At the top, there is a 'Views' menu with icons for Groups, Exceptions, Active Tasks, Console Actions, Task List, and Books. The 'Groups' view is selected. Below the Views menu is the 'CPC Work Area' which contains a tree view with 'R5C0' and 'CPs' (containing 'CHPIDs'). An arrow points to the 'CPs' icon. On the right side, there is a 'Daily' panel with various system messages and actions like 'Hardware Messages', 'Operating System Messages', 'Activate', 'Reset Normal', 'Deactivate', 'Grouping', 'Activity', and 'Help'.

- **Not Shown**
  - Open the **Groups** view
  - Open the **CPC** group
- **Single-click the CPC icon with the right mouse button**
- **Single-click CPs with the left mouse button to display the CPs**
- **Single-click CHPIDs with the left mouse button to display the CHPIDs**

Display details by double-clicking, start a task by dragging, Use right-mouse button to show CPs or CHPIDs.

# Images Group Opened



- Any color on either side of the Image object should be investigated
- Color on the left half of the Image object represents the Image status
  - Unacceptable status condition exists for the image
- Color on the right half of the Image object represents the CHPID status
  - At least one CHPID has an unacceptable status condition
- Double-click the Image object to display the Details panel




















# CHPIDs Work Area

R5C0: Support Element Workplace (Version 1.5.1)

Views

Groups Exceptions Active Tasks Console Actions Task List Books

R5C0 CHPIDs Work Area

 80 Online Shared Operating	 84 Reserved Not defined	 85 Reserved Not defined	 88 Online Shared Operating	 89 Online Dedicated Not Isolated Operating	 8C Online Shared Operating	
 8D Online Dedicated Not Isolated Operating	 90 Online Shared Operating	 91 Reserved Not defined	 92 Online Shared Operating	 93 Reserved Not defined	 94 Online Shared Operating	
 95 Online Shared Operating	 96 Online Shared Operating	 97 Online Shared Operating	 98 Reserved Not defined	 99 Reserved Not defined	 9A Online Shared Operating	 9B Online Shared Operating

Daily

- Hardware Messages
- Operating System Messages
- Activate
- Reset Normal
- Deactivate
- Grouping
- Activity
- Help

# Images CHPIDs Work Area

R5C0: Support Element Workplace (Version 1.5.1)

Views

Groups Exceptions Active Tasks Console Actions Task List Books

Daily

- Hardware Messages
- Operating System Messages
- Activate
- Reset Normal
- Deactivate
- Grouping
- Activity
- Help

L501 CHPIDs Work Area

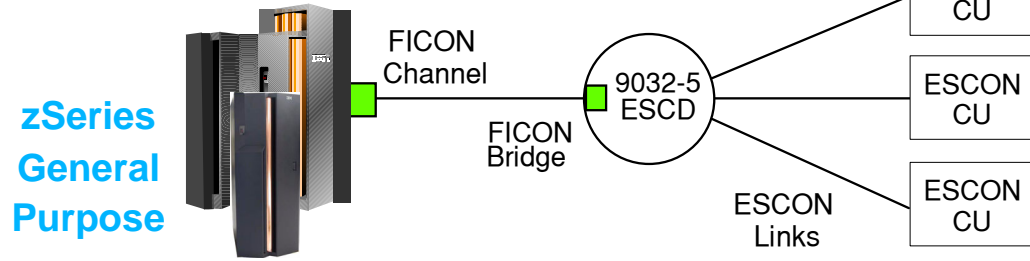
80 Online Shared Operating	88 Online Shared Operating	8C Online Shared Operating	90 Online Shared Operating	92 Online Shared Operating	94 Online Shared Operating	95 Online Shared Operating
				IFCC threshold exceeded		
97 Online Shared Operating	9A Standby Shared Operating	9B Standby Shared Operating	A0 Online Shared Operating	IFCC threshold exceeded		
A1 Online Shared IFCC threshold exceeded	A2 Online Shared Operating	A3 Online Shared Operating	B8 Online Reconfigurable Not Isolated Operating	BA Online Shared Operating		
E0 Online	E1 Online	E4 Online	E5 Online			

Display details by double-clicking, start a task by dragging, Use right-mouse button to perform sorts.



# FICON Operating Modes

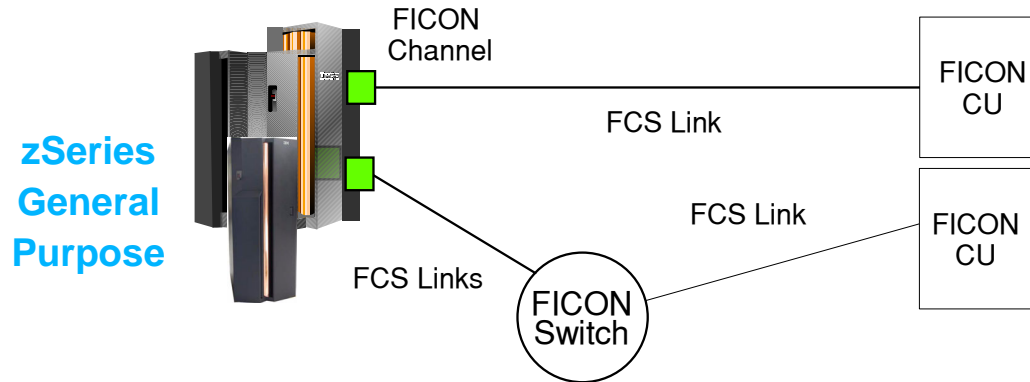
## FICON Bridge Connections:



★ *Exploit FICON Channel with Existing ESCON Control Units*

**Type=FCV**

## Native FICON Direct Attachment and Switched Connectivity:

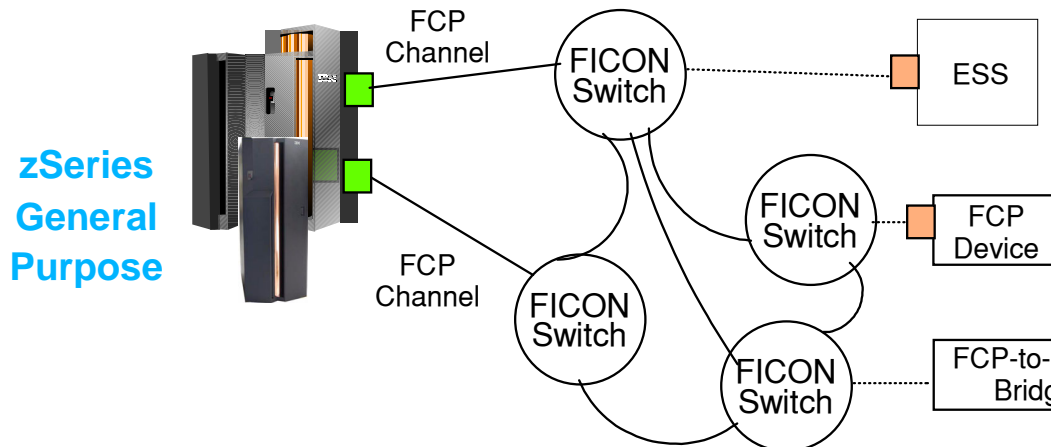


★ *Native FICON Control Units*

★ *Full Dynamic Switching of FICON Control Units*

**Type=FC**

## Native FICON Direct Attachment and Switched Connectivity:

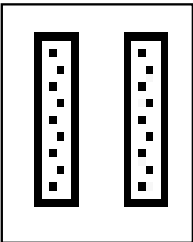


★ *FCP Full Connectivity*

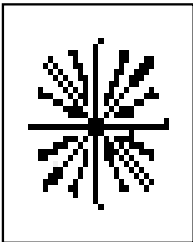
★ *FCP to SCSI Bridge*

**Type=FCP**

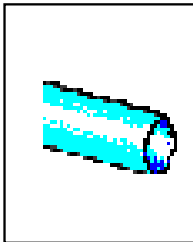
# Icon Depicts the CHPID Type



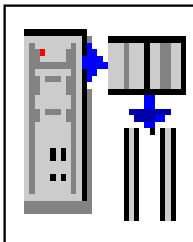
Parallel



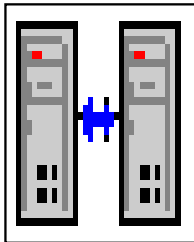
ESCON CNC



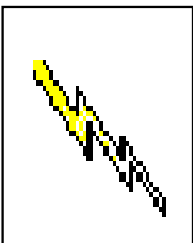
OSA-2  
Ethernet, Token Ring  
FDDI or ATM



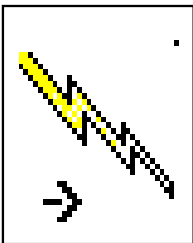
CVC or CBY



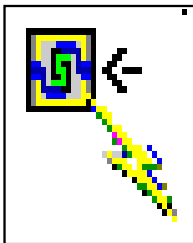
CTC



CFR



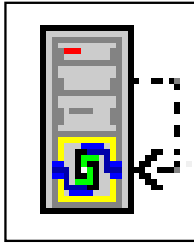
CFS



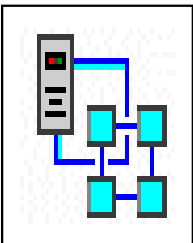
CBR



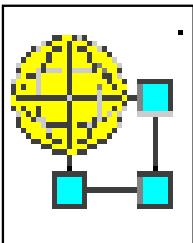
CBS



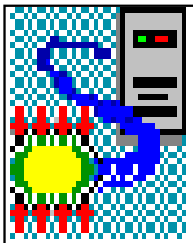
ICR



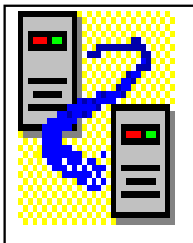
OSA-2  
Fast Ethernet



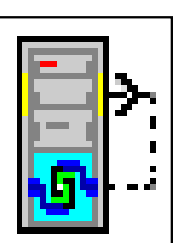
Gb Ethernet



FICON  
Bridge



FICON  
native



ICS

# CHPIDs Detail Panel



## CHPID90 Details

### Instance information

Status: Operating

Owning image: Shared

CHPID type: ESCON Connection

### Acceptable status

<input checked="" type="checkbox"/> Operating	-	<input type="checkbox"/>	<input type="checkbox"/> Permanent error	-	<input type="checkbox"/>	<input type="checkbox"/> Offline signal received	-	<input type="checkbox"/>
<input type="checkbox"/> Suspended	-	<input type="checkbox"/>	<input type="checkbox"/> Loss of signal	-	<input type="checkbox"/>	<input type="checkbox"/> Log stored	-	<input type="checkbox"/>
<input type="checkbox"/> No power	-	<input type="checkbox"/>	<input type="checkbox"/> Loss of synchronization	-	<input type="checkbox"/>	<input type="checkbox"/> Test mode	-	<input type="checkbox"/>
<input type="checkbox"/> Service	-	<input type="checkbox"/>	<input type="checkbox"/> Not operational link	-	<input type="checkbox"/>	<input checked="" type="checkbox"/> Bit error threshold exceeded	-	<input type="checkbox"/>
<input type="checkbox"/> Not defined	-	<input type="checkbox"/>	<input type="checkbox"/> Sequence time-out	-	<input type="checkbox"/>	<input checked="" type="checkbox"/> IFCC threshold exceeded	-	<input type="checkbox"/>
<input checked="" type="checkbox"/> Definition error	-	<input type="checkbox"/>	<input type="checkbox"/> Sequence not permitted	-	<input type="checkbox"/>	<input type="checkbox"/> Match	-	<input type="checkbox"/>
<input type="checkbox"/> Wrap block	-	<input type="checkbox"/>	<input type="checkbox"/> Terminal condition	-	<input type="checkbox"/>	<input type="checkbox"/> Stopped	-	<input type="checkbox"/>
<input type="checkbox"/> Check Stop	-	<input type="checkbox"/>	<input type="checkbox"/> Disabled	-	<input type="checkbox"/>	<input type="checkbox"/> I/O Suppressed	-	<input type="checkbox"/>

Save

Cancel

Help

# I/O or Channel Problem Determination

R5C0: Support Element Workplace (Version 1.5.1)

**Views**

- Groups
- Exceptions
- Active Tasks
- Console Actions
- Task List
- Books

**L501 CHPIDs Work Area**

80 Online Shared Operating	88 Online Shared Operating	8C Online Shared Operating	90 Online Shared Operating	92 Online Shared Operating	94 Online Shared Operating	95 Online Shared Operating
97 Online Shared Operating	9A Standby Shared Operating	9B Standby Shared Operating	A0 Online Shared	IFCC threshold exceeded		
A1 Online Shared IFCC threshold exceeded	A2 Online Shared Operating	A3 Online Shared Operating	B8 Online Reconfigurable Not Isolated Operating	BA Online Shared Operating		
E0 Online	E1 Online	E4 Online	E5 Online			

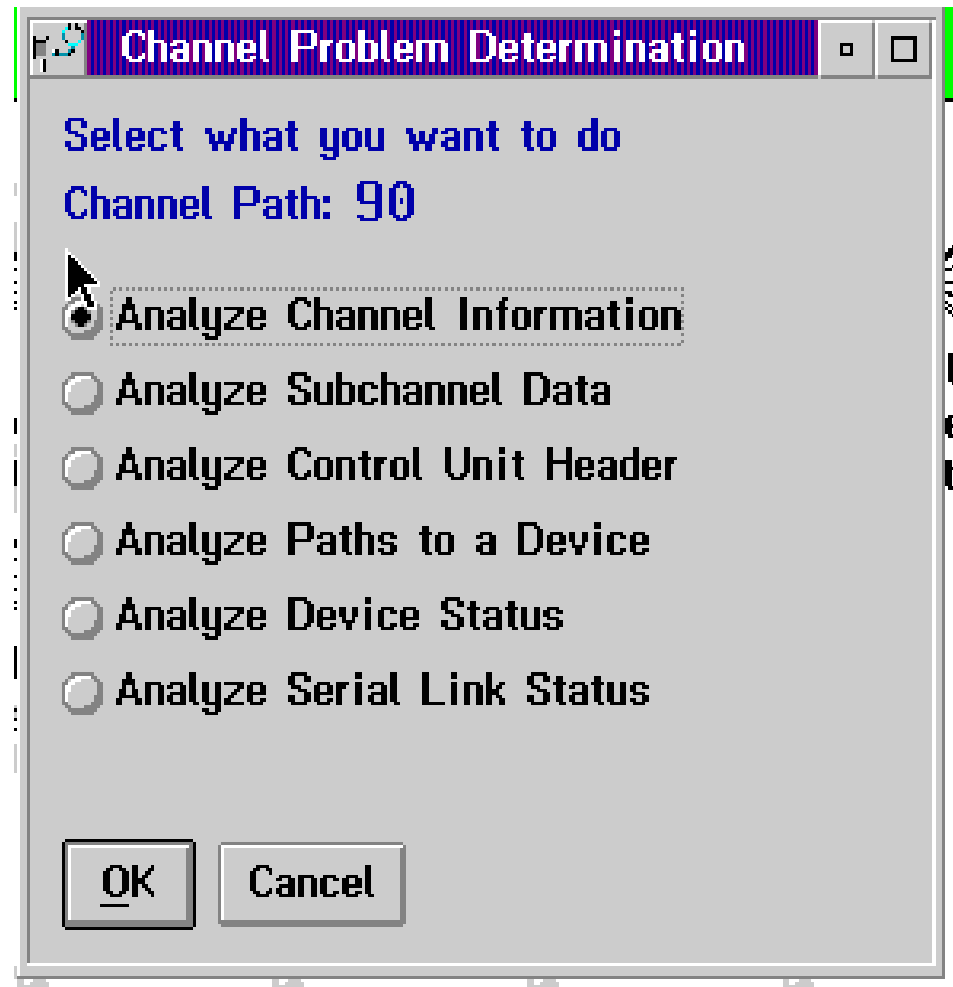
**CHPID Operations**

- Hardware Messages
- Operating System Messages
- Configure On/Off
- Release
- Service On/Off
- Reset I/O Interface
- Advanced Facilities
- Reassign Channel Path
- Channel Problem Determination
- Help

Use CHPID Operation tasks to manage CHPIDs.

# Channel Problem Determination Menu

- Provides Channel Information (default selection)
- Subchannel Data is used for device and path PD
- Control Unit Header is used to display control unit information
- Paths to a Device is used for pathing information
- Device Status is used to display the current state of every device defined on the CHPID
- Serial Link Status is used for ESCON link PD



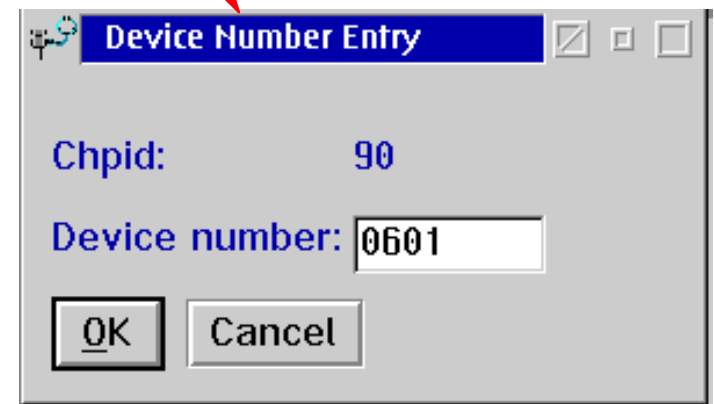
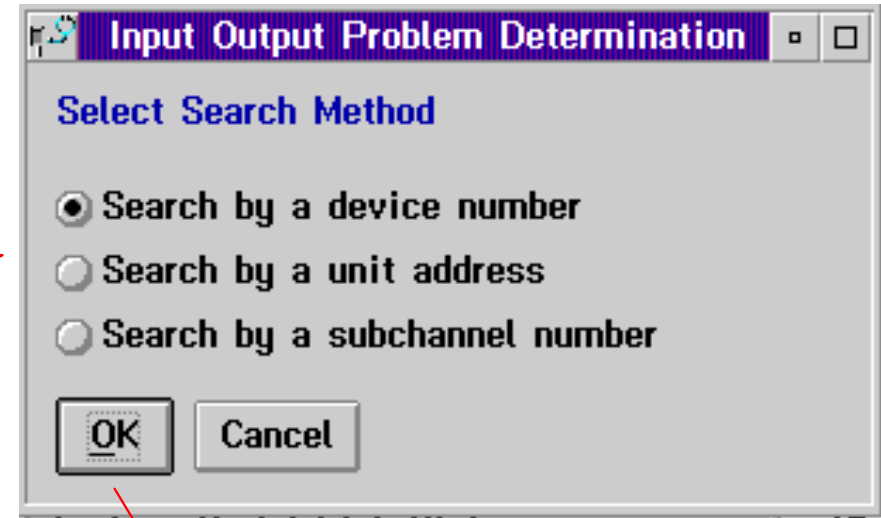
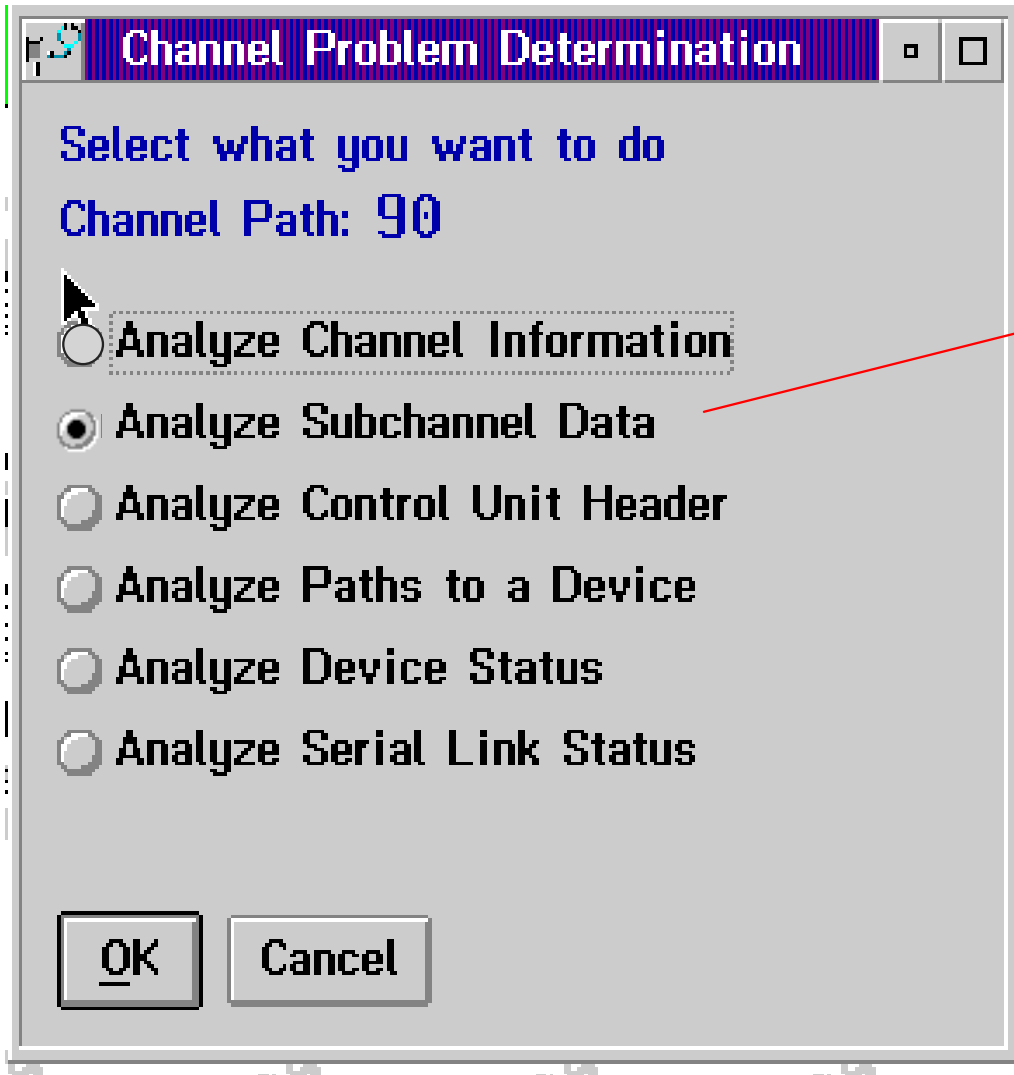
# CHPID 90 Channel Information

Analyze Channel Information

Channel type:	ESCON CNC	Link address:	89
		Control unit addr:	00
		Unit address:	01
Image identifier:	1		
Channel mode:	Shared	Absolute address:	022A2000
		Maint regs 1-4:	050000C0
CHPID:	90	Maint regs 5-8:	0000A600
Physical address:	90	SAP/CHNL maint ctl:	00
Switch number:	07	SP/SAP maint ctl:	00
Switch number valid:	1	CVC CCC threshold:	5
		IFCC threshold:	4
		Channel link address:	98
State:	Online	Temp error threshold:	04
Status:	Operating	Suppress:	0
Image chnl state:	Online		
Image chnl status:	Operating		
Error code:	00		
Ber inbound:	0		
Ber outbound:	0		
Node type:	Self	Node type:	Attached
Node status:	Valid	Node status:	Valid
Flag/Parm:	10000190	Flag/Parm:	00000A00
Type/Model:	009672-R86	Type/Model:	009032-003
MFG:	IBM	MFG:	IBM
Plant:	02	Plant:	02
Seq. number:	000000050717	Seq. number:	000000021703
Tag:	0090	Tag:	0018

OK Error details... Refresh

# Displaying Subchannel Data for Device 601



# Subchannel Data

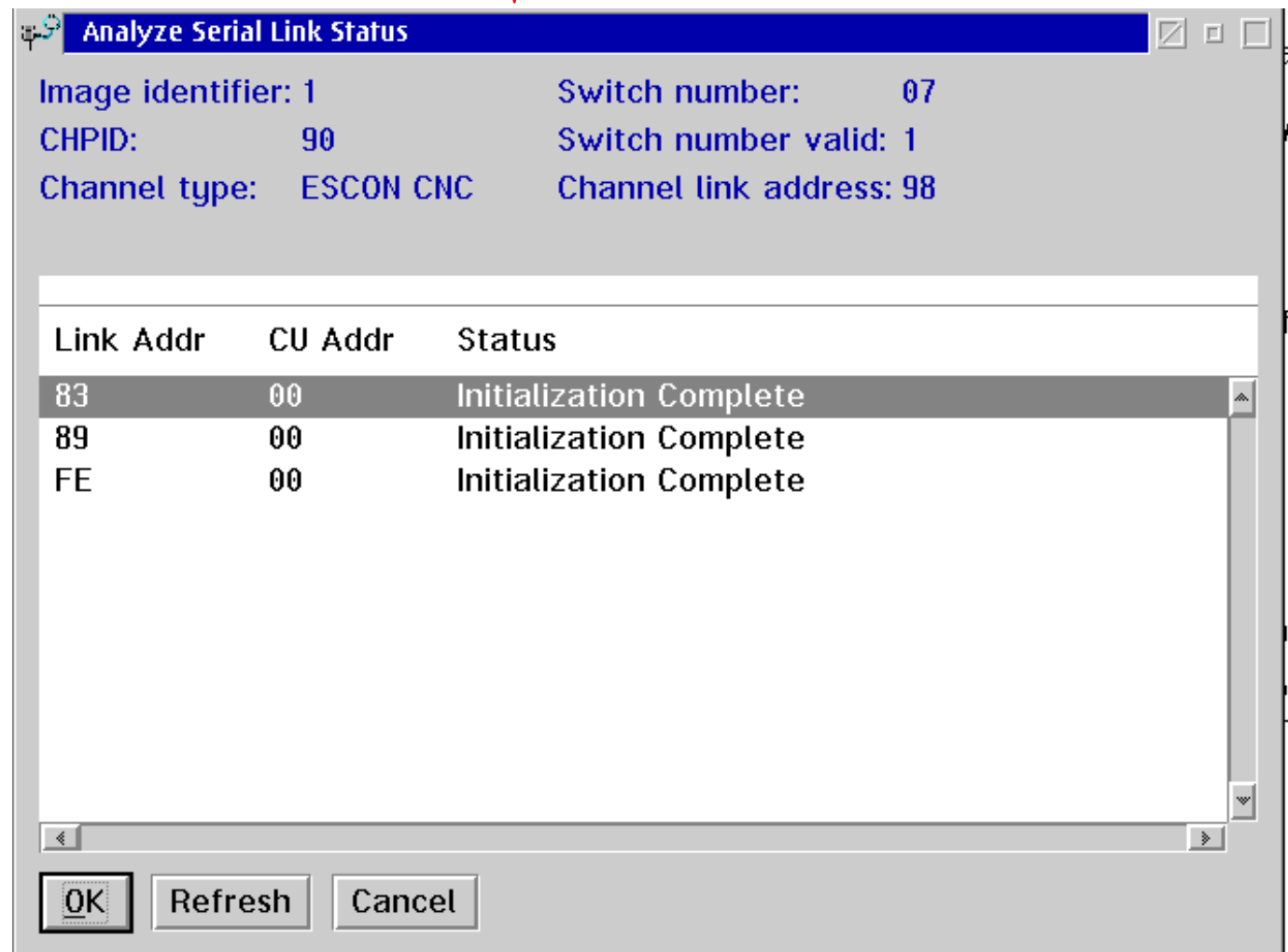
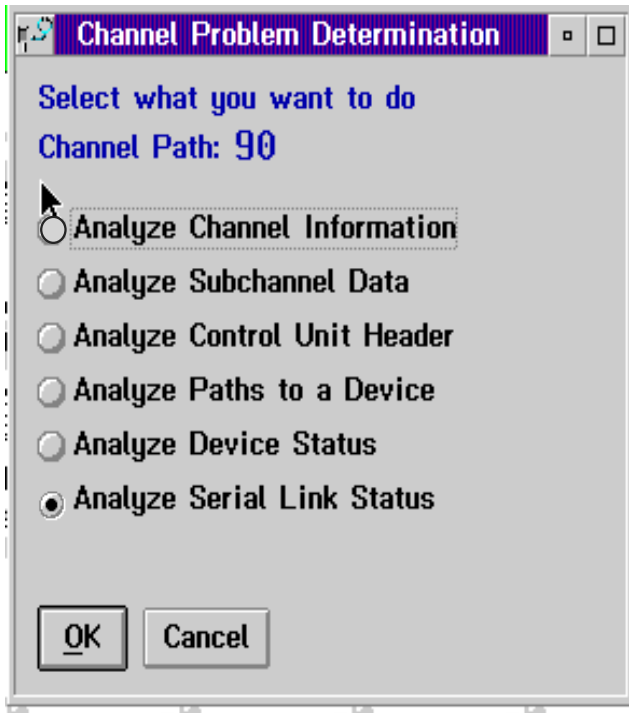
Analyze Subchannel Data							
Absolute addr:	01D52700	lrpt parm:	00F3A5E0	CHPID0:	90	CU header ptr:	022B090
Subch no.:	024E	ISC:	5	CHPID1:	A0	SCH chain ptr:	022C3B0
Device no.:	0601	Enabled:	1	CHPID2:	9A	Ch pgm addr:	032C924
Unit addr:	01	Limit mode:	00	CHPID3:	95	Start T/S:	8C
Image ID:	1	Meas mode:	00	CHPID4:	FF	Candidates:	11010000
Intf	ESCON	Multipath:	0	CHPID5:	FF	Dev busy msk:	00000000
Dev no. valid:	1	Timing:	1	CHPID6:	FF	Key:	00
CU def'd:	1	LPM:	11110000	CHPID7:	FF	S, L, DCC, F:	00001
Subch def'd:	1	PNOM:	00000000	Ded alleg:	0	ILSM:	0
Path		LPUM:	10000000	CU type:	10	P,I,A,U,Z,E,N:	00000000
Pref def'd:	0	PIM:	11110000	T/S valid:	0	Function cntl:	000
Pref path:	0	POM:	11111111			Activity cntl:	00000000
On Q:	1	PAM:	11010000			Status cntl:	00000
Subch active:	0	Meas index:	34			Dev busy time:	00000000
		On Q:	0000			CU busy time:	00000000
		Qing time:	0			Busy timestmp:	0
		Storage key:	0			Allegiance:	11111111
		Status verify:	1			Retry CCW adr/ERW:	00000000
		Intf timeout:	0			Active CCW addr + 8:	032C925
		UA cmpr enable:	0			Cmd/Dev status:	0C
		Concurrent sense:	1			Flgs/Subch status:	00
		Control field 1:	00000900			Residual count:	0008
		Control field 2:	10010400			Dev con time/ESW0:	00800000
		Control field 3:	00000000			ECW0:	60807670
		Control field 4:	00080000			ECW1:	00000000
		Control field 5:	00000400			ECW2:	96880600
		Control field 6:	0000			ECW3:	60817670



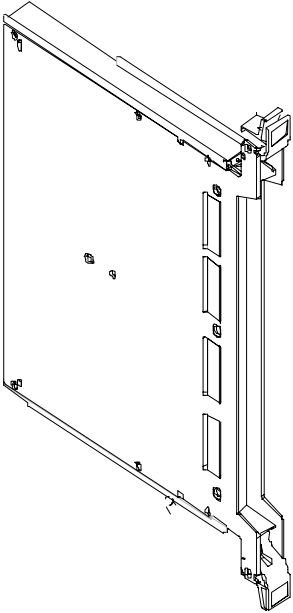
# **New on PD panel for zSeries**

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# Analyze Serial Link Status



# 16 Port ESCON Card



ESCON 16  
Port channel  
card

**16 Serial Ports**

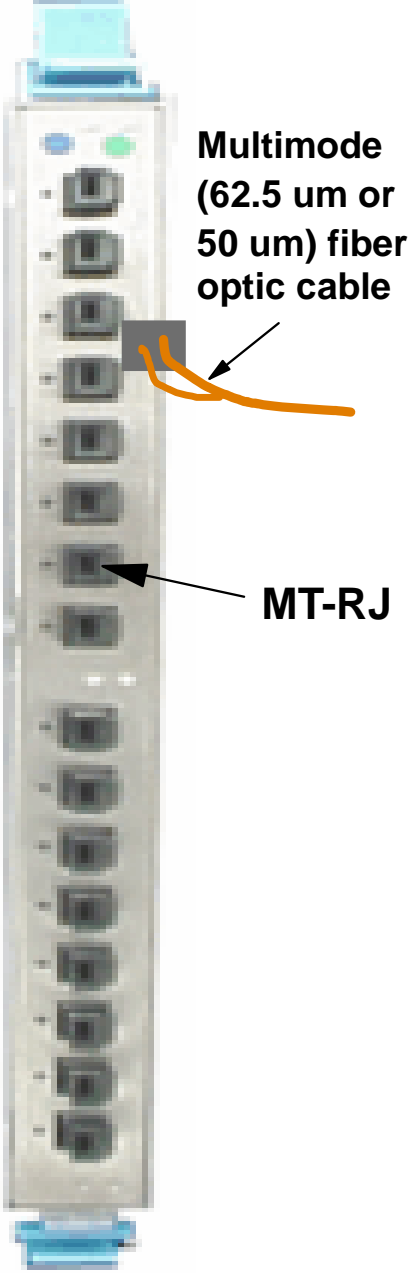
**Modes of Operation:  
ESCON Native, Conversion BLMPX  
and BYMPX, Channel-to-Channel**

**CMOS-6SF Modules with four Serial Channel  
Engines.**

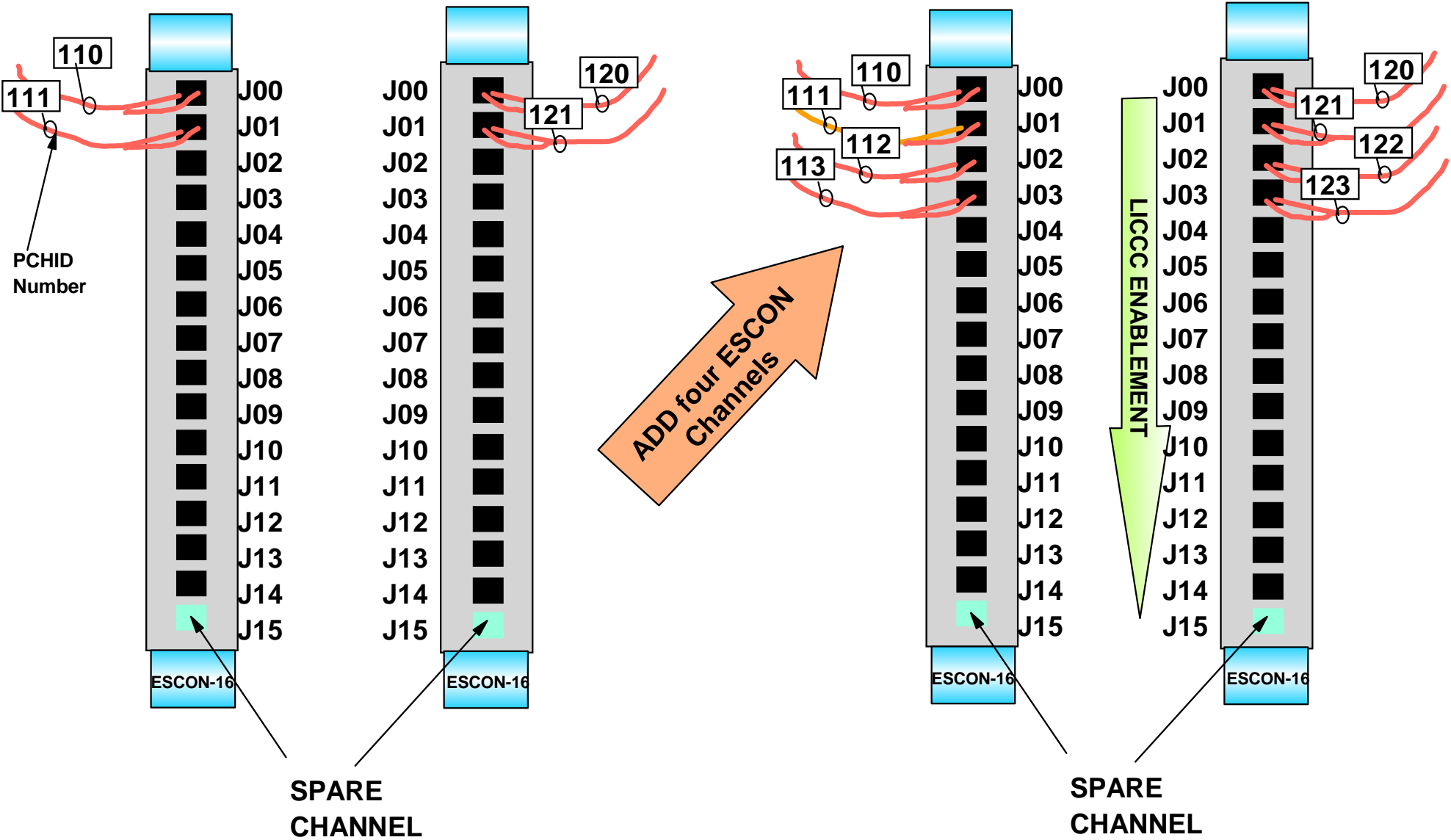
**Small Form Factor module and MT-RJ  
connector**

**Quick Connect Feature - MT-RJ to  
MTP Harnesses.**

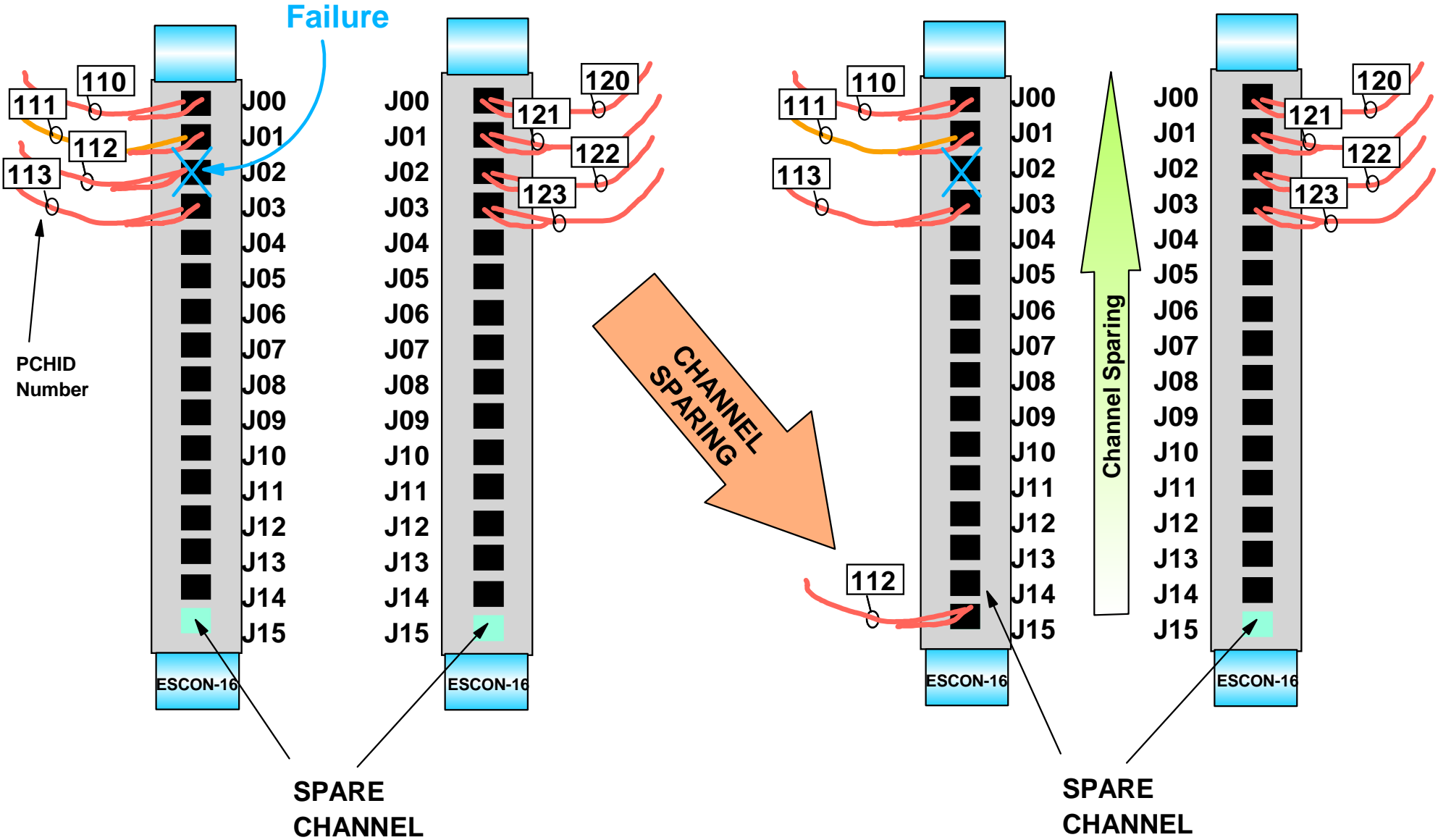
**Channel Sparing and  
LIC-CC**



# ESCON-16 LIC-CC Enabled



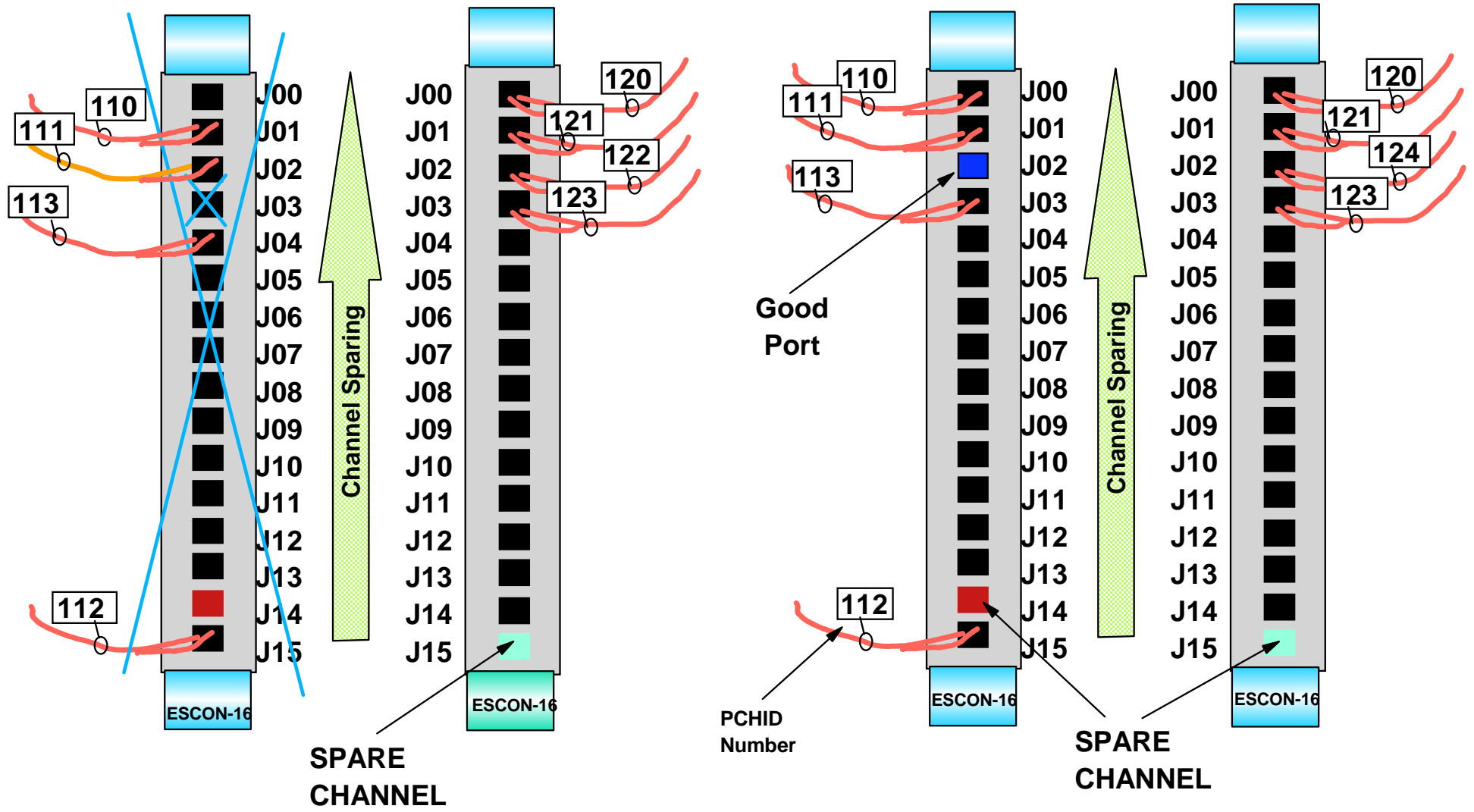
# ESCON-16 Channel Sparing



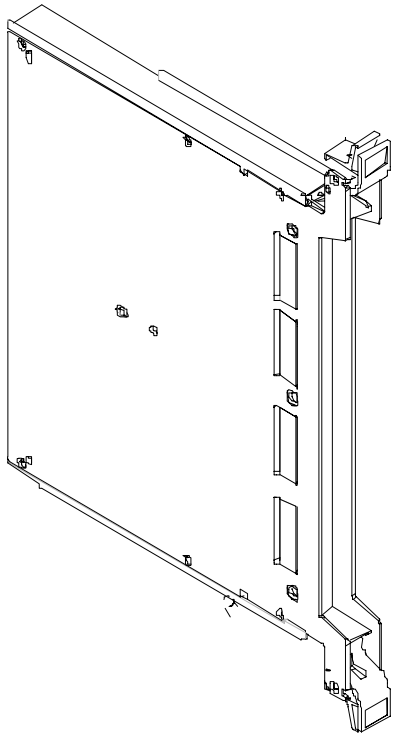
# ESCON-16 Card Failure

Total card failure

Cables removed, card replaced, cables returned to same location numbers on the new card that were installed at on the failed card.



# FICON Express Channel Card



**Two Channels per card.**

**Two Channel Card types:**

- LONG WAVE (LX)
- SHORT WAVE (SX)

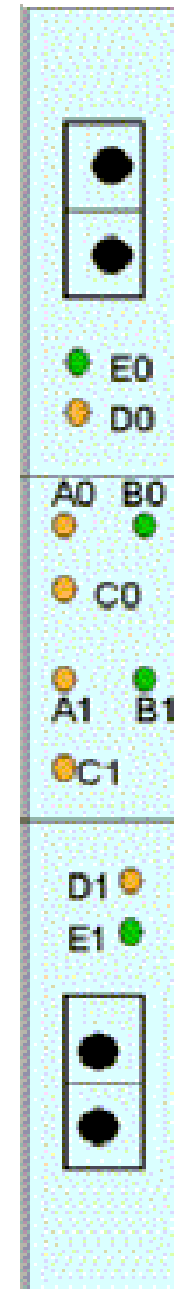
**Three Modes of Operation:**

- Conversion Mode (FCV)
- Native Mode (FC)
- FCP Mode (FCP)

**Link Speed: Two Gb/Sec at 10 Km  
unrepeated distance (12 Km with RPQ)**

**Up to 120 FICON Express channels on a  
z990**

**Up to 40 FICON Express channels on a  
z890**



**LC Duplex MM**



or

**LC Duplex SM**



**Single mode  
(9 um)  
or  
Multimode  
(62.5 um or  
50 um)**

# Log Off When Finished

R5C0: Support Element Workplace (Version 1.5.1)

**Views**

- Restore Alt+F5
- Move Alt+F7
- Size Alt+F8
- Minimize Alt+F9
- Maximize Alt+F10
- Hide Alt+F11
- Log off Alt+F4
- Window list Ctrl+Esc
- Select all
- Deselect all
- Lock all
- Autosize Windows
- Logon details
- Hover Help
- Views

**Views**

- Console Actions
- Task List
- Books

**Console Actions Work Area**

- Enable Console Services
- Customize Date/Time
- HSA Estimation Tool
- Log off

**Daily**

- Hardware Messages
- Operating System Messages
- Activate
- Reset Normal
- Deactivate
- Grouping
- Activity
- Help

- Format Optical Disk
- Network Diagnostic Information
- View Security Logs

- Log off when the CPC Session has completed

Start a console related task by double-clicking a task icon.



# Maintenance and PD Tools

FICON directors, in S/390 mode, has the same functions as existing ESCON directors such as;

- Blocking and Prohibiting Ports
- Port Swaps
- Node Descriptor lists and pop-ups

\*Node descriptors are a valuable aid to determine cable connectivity location and current status.

Overall the FICON director panels supporting these functions have the familiar look and feel as the ESCON directors. However the layout, use and navigation to the panels are slightly different.

# Overview

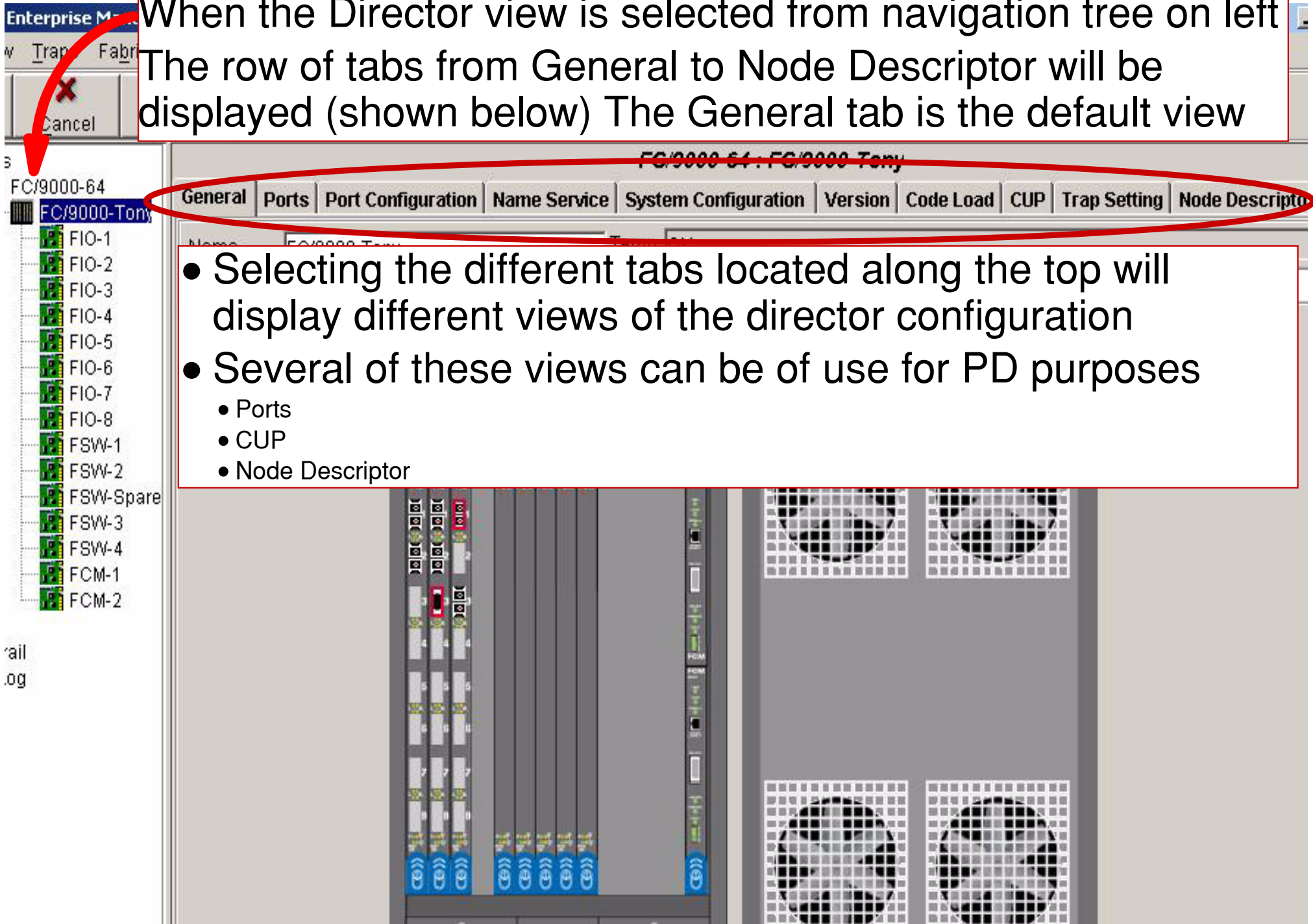
In the following examples we will identify

- General navigation techniques for
  - 2042 (InRange director)
  - 2032 (McData director)
- Screens that may be of use for Problem Determination (PD) and connectivity issues
- Potential PD flow for an Alert issued against a FICON director
  - There can, and usually are, multiple ways to navigate FICON director panels. Not all possibilities are shown.
  - Panels and navigation shown may change depending on code levels of directors and their associated manager products

# 2042 (InRange)

When the Director view is selected from navigation tree on left  
The row of tabs from General to Node Descriptor will be displayed (shown below) The General tab is the default view

- Selecting the different tabs located along the top will display different views of the director configuration
- Several of these views can be of use for PD purposes
  - Ports
  - CUP
  - Node Descriptor



# Tab usage

Refresh

IN20D0 : FC/9000-128

Ports	Name Service	Hard Zoning	System Configuration	Version	Code Load	CUP	Trap Setting	Node Descriptor
Address	Flag	Protocol...	Class	Type Number	Mode Num...	Mfg Code	Plant	Seq No.
00								
01	0x10	0x20	0x1	002064	116	IBM	02	0000000112#
02	0x10	0x20	0x1	002064	116	IBM	02	0000000112#
	0x10	0x20	0x1	002064	116	IBM	0	
	0x10	0x20	0x1	002064	116	IBM	0	

Ports  
Good Info,  
will take a  
closer look

Node Descriptor  
Good Info,  
will take a  
closer look

- **Hard Zoning** - Code dependent may not be present in S/390 (FICON) mode
- **System Configuration** Identifies configuration info, director s/n, FICON, CUP support, domain ID, etc

- **Version** - Identifies code version levels for supported functions
- **Code Load** -firmware level of director
- **Cup** - Tab is displayed if director supports CUP function, can set active=saved, enable host control select config files

# Ports Tab

From the **'Ports'** tab information such as; Port Numbers, Port Addresses, Prohibits and Blocks can be gathered (port numbers are in decimal, port addresses are in hex, may need to use slider bar at bottom to view the various columns)

General	Ports	Port Configuration	Name Service	System Configuration	Version	Code Load	CUP	Trap Setting	Node	
Trap/Ala.	Number	Name	Descrip..	Address	Status	Prohibit	Blocked	Transm...	Receive...	Save St...
	0	Port-000ESS1CA1		00	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	1	Port-001CPUACHP10		01	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	2	Port-002ESS2CA1		02	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	3	Port-003CPUBCHP10		03	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	4	04		04	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	5	05		05	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	6	06		06	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	7	07		07	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	8	08		08	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	9	09		09	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	10	Port-010SeagateJBOD		0A	Online	NO	<input type="checkbox"/>			<input checked="" type="checkbox"/>
	11	Port-011		0B	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	12	Port-012		0C	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	13	Port-013		0D	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	14	Port-014		0E	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	15	Port-015		0F	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	16	Port-016QlogicHBA		10	Online	NO	<input type="checkbox"/>			<input checked="" type="checkbox"/>
	17	Port-017		11	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	18	Port-018		12	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	19	Port-019		13	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>
	20	Port-020		14	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>



# Right click Navigation

Apply Cancel Refresh

Fabrics

- FC/9000-64
  - FC/9000-Tony**
    - FIO-1
    - FIO-2
    - FIO-3
    - FIO-4
    - FIO-5
    - FIO-6
    - FIO-7
    - FIO-8
    - FSW-1
    - FSW-2
    - FSW-Spare
    - FSW-3
    - FSW-4
    - FCM-1
    - FCM-2
- Users
- AuditTrail
- EventLog

**FC/9000-64 : FC/9000-Tony**

General	Ports	Port Configuration	Name Service	System Configuration	Version	Code Lo...		
Trap/Ala...	Number	Name	Descrip...	Address	Status	Prohibit	Blocked	T
	0	Port-000ESS1CA1		00	Offline	NO	<input type="checkbox"/>	
	1	Port-001CPUACHP10		01	Offline	NO	<input type="checkbox"/>	
	2	Port				NO	<input type="checkbox"/>	
	3	Port				NO	<input type="checkbox"/>	
	4	04				NO	<input type="checkbox"/>	
	5	05				NO	<input type="checkbox"/>	
	6	06				NO	<input type="checkbox"/>	
	7	07				NO	<input type="checkbox"/>	
	8	08		08	Offline	NO	<input type="checkbox"/>	
	9	09		09	Offline	NO	<input type="checkbox"/>	
	10	Port-010Se			Online	NO	<input type="checkbox"/>	
	11	Port-011			Offline	NO	<input type="checkbox"/>	
	12	Port-012			Offline	NO	<input type="checkbox"/>	
	13	Port-013			Offline	NO	<input type="checkbox"/>	
	14	Port-014			Offline	NO	<input type="checkbox"/>	
	15	Port-015			Offline	NO	<input type="checkbox"/>	
	16	Port-016QL			Online	NO	<input type="checkbox"/>	
	17	Port-017			Offline	NO	<input type="checkbox"/>	
	18	Port-018			Offline	NO	<input type="checkbox"/>	
	19	Port-019			Offline	NO	<input type="checkbox"/>	
	20	Port-020			Offline	NO	<input type="checkbox"/>	
	21	Port-021			Offline	NO	<input type="checkbox"/>	
	22	Port-022			Offline	NO	<input type="checkbox"/>	
	23	Port-023			Offline	NO	<input type="checkbox"/>	
	24	Port-024			N/A	NO	<input type="checkbox"/>	
	25	Port-025			N/A	NO	<input type="checkbox"/>	
	26	Port-026			N/A	NO	<input type="checkbox"/>	
	27	Port-027			N/A	NO	<input type="checkbox"/>	

Right clicking on this panel will display a navigation pop-up window

- View Node Descriptor
- Device List
- Zones List
- Edit Prohibits...
- Port Swap...
- Resynchronize
- Clear Trap/Alarm
- Default Names
- Print...
- Save Config
- Retrieve Config
- Export...
- Import...

# Pop-up Node descriptor or ports

The screenshot shows the IN-VSN Enterprise Manager interface. On the left, a tree view shows 'Fabrics' with 'f05' selected, and 'RoseMary' selected under it. The main area displays a table of ports for 'f05 : Sams\_baby'. A pop-up window titled 'Port > Node Descriptor' is open, showing details for a selected port. A red box highlights the pop-up window and the text 'Selecting 'View Node Descriptor' from previous navigation pop-up, displays a node descriptor window for the individual selected port'.

Trap/Al...	Number	Name	Descri...	Address	Status	Prohibit	Blocked	Trans...	Receiv...	Save St...	Monitor...	Lower ...	Upper
	0			00	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	1			01	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	2			02	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	3						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	4						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	5						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	6						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	7						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	8						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	9						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	10						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	11						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	12						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	13						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	14						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	15						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	16						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	17						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	18						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	19						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	20	IRNDU...					<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	21						<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	22	IRNDU...					<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	23	IRNDU...		17	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	24	IRNDU...		18	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	25	IRNDU...		19	Online	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	26			1A	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	27			1B	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	28			1C	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	29			1D	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		
	30			1E	Offline	NO	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		

Port > Node Descriptor

Flag: 0x10  
Protocol Type: 0x20  
Class: 0x1  
Link Address: 0xF8  
Type Number: 009672  
Model Number: RX6  
Manufacturer Code: IBM  
Plant: 02  
Seq Number: 000000057186  
Tag: 0xF812

Close

Selecting 'View Node Descriptor' from previous navigation pop-up, displays a node descriptor window for the individual selected port

# Edit Prohibit Port list

IN-VSN Enterprise Manager

File View Traps Fabric Director Help

Apply Cancel Refresh

FC/9000-64 : FC/9000-Tony

General Ports Port Configuration Name Service System Configuration Version Code Load CUP Trap

Trap/Ala...	Number	Name	Descrip...	Address	Status	Prohibit	Blocked	Transm...	Receiv...
	0	Port-000ESS1CA1		00	Offline	NO	<input type="checkbox"/>		
	1	Port-001CPUACHP10		01	Offline	NO	<input type="checkbox"/>		

**Prohibited Ports**

Name	Port-000...	Port-001...	Port-002...	Port-003...	04	05	06	07	08
Port-000ESS1CA1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-001CPUACHP10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-002ESS2CA1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-003CPUBCHP10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
05	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
06	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
07	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
08	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-010SeagateJBOD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-011	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-012	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-013	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-014	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-015	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port-016QlogicHBA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Selecting 'Edit Prohibits' from the previous navigation pop-up, lists the ports and will allow you to edit what ports are prohibited to other ports

OK Cancel

Selected port: Port-000ESS1CA1



# Port Swapping

IN-VSN Enterprise Manager

File View Traps Fabric Director Help

Apply Cancel Refresh

Fabrics

- FC/9000-64
  - FC/9000-Tony**
    - FIO-1
    - FIO-2
    - FIO-3
    - FIO-4
    - FIO-5
    - FIO-6
    - FIO-7
    - FIO-8
    - FSW-1
    - FSW-2
    - FSW-Spare
    - FSW-3
    - FSW-4
    - FCM-1
    - FCM-2
- Users
- AuditTrail
- EventLog

**FC/9000-64 : FC/9000-Tony**

General	Ports	Port Configuration	Name Service	System Configuration	Version	Code Load	CUI	
Trap/Ala...	Number	Name	Descrip...	Address	Status	Prohibit	Blocked	Transm..
	0	Port-000ESS1CA1		00	Offline	NO	<input type="checkbox"/>	
	1	Port-001CPUACHP10		01	Offline	NO	<input type="checkbox"/>	
	2	Port-002ESS2CA1		02	Offline	NO	<input type="checkbox"/>	
	3	Port-003CPUBCHP					<input type="checkbox"/>	
	4	04					<input type="checkbox"/>	
	5	05					<input type="checkbox"/>	
	6	06Port-006Spare					<input type="checkbox"/>	
	7	07					<input type="checkbox"/>	
	8	08					<input type="checkbox"/>	
	9	09		09	Online	NO	<input type="checkbox"/>	
	10	Port-010Seagate JBOD		0A	Online	NO	<input type="checkbox"/>	
	11	Port-011					<input type="checkbox"/>	
	12	Port-012					<input type="checkbox"/>	
	13	Port-013					<input type="checkbox"/>	
	14	Port-014					<input type="checkbox"/>	
	15	Port-015					<input type="checkbox"/>	
	16	Port-016Qlogic					<input type="checkbox"/>	
	17	Port-017					<input type="checkbox"/>	
	18	Port-018		12	Offline	NO	<input type="checkbox"/>	
	19	Port-019		13	Offline	NO	<input type="checkbox"/>	
	20	Port-020		14	Offline	NO	<input type="checkbox"/>	
	21	Port-021		15	Offline	NO	<input type="checkbox"/>	
	22	Port-022		16	Offline	NO	<input type="checkbox"/>	

Selecting 'Port Swap' from the previous navigation pop-up, will allow you to select what ports are to be swapped by using the pull-downs

**Port Swapping**

Failing Port: Port-000ESS1CA1 (0x00)

Spare Port: 06Port-006Spare (0x06)

Ok Cancel

# Node Descriptor List

Manager  
Fabric Director Help

Refresh

Select Node Descriptor for a listing of all ports

Port Address column (port addresses are in Hex and are used by HCD)

IN20D0 : FC/9000-128

Ports	Name	Service	Hard zoning	System Configuration	Version	Code Load	CUP	Trap Setting	Node Descriptor
Address	Flag	Protocol...	Class	Type Number	Model Num...	Mfg Code	Plant	Seq No.	
00									
01	0x10	0x20	0x1	002064	116	IBM	02	0000000112AF	
02	0x10	0x20	0x1	002064	116	IBM	02	0000000112AF	
03	0x10	0x20	0x1	002064	116	IBM	02	0000000112AF	
04	0x10	0x20	0x1	002064	116	IBM	02	0000000112AF	
05									
06	0x10	0x20	0x1	002064	116	IBM	02	0000000112AF	
07				002064	116	IBM	02	0000000112AF	
08				009672	ZX7	IBM	02	000000046810	
09				009672	ZX7	IBM	02	000000046810	
0A				002105	F20	IBM	75	000000016770	
0B				002105	F20	IBM	75	000000016770	
0C				002105	F20	IBM	75	000000016468	
0D									
0E									
0F									
10	0x10	0x20	0x1	002064	116	IBM	02	0000000112AF	
11	0x10	0x20	0x1	002064	114	IBM	02	000000050941	
12	0x10	0x20	0x1	002064	114			000000050941	
13									

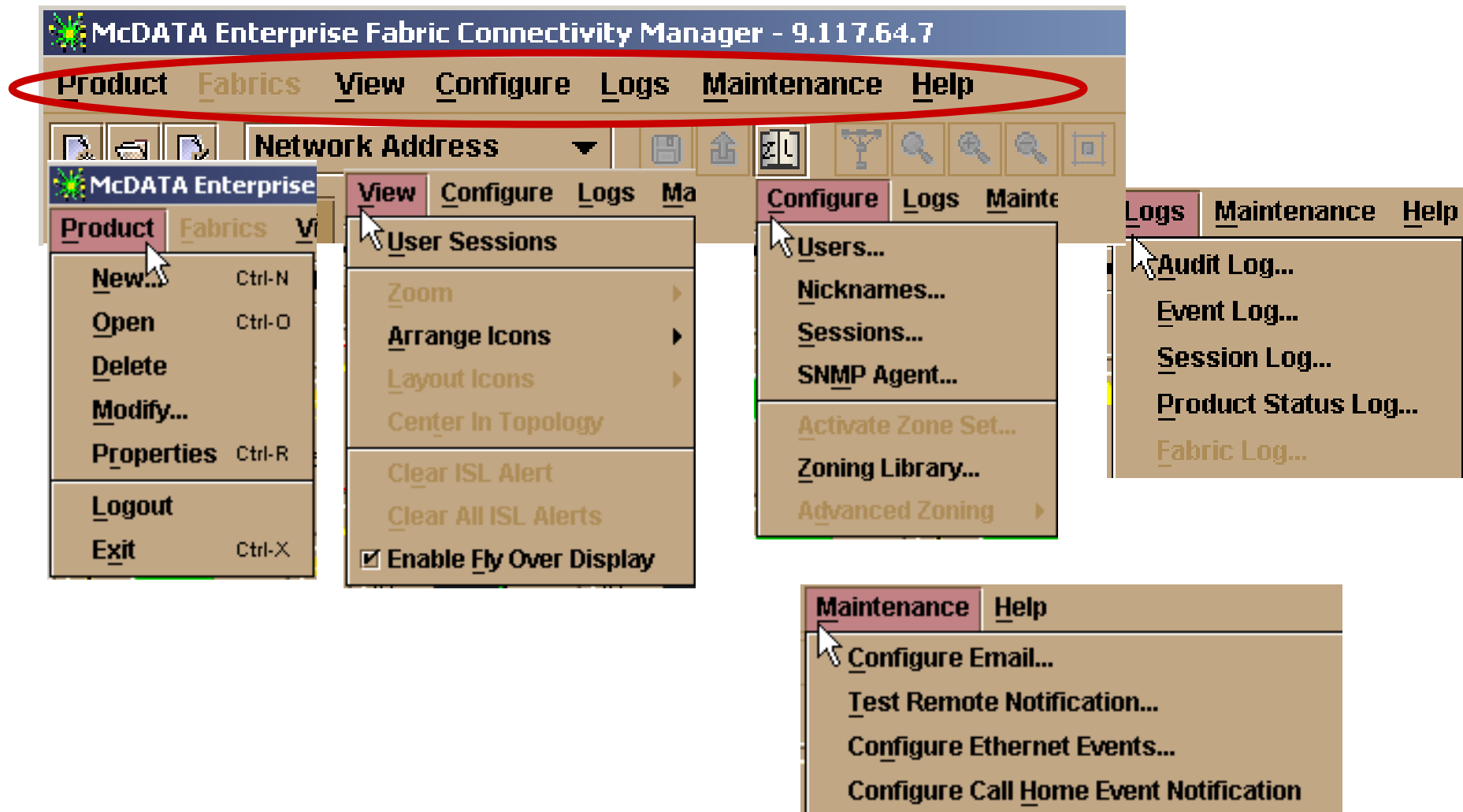
Information about the connected port is displayed here, such as Machine type / model and serial number

Embedded in the sequence number is the machine serial number



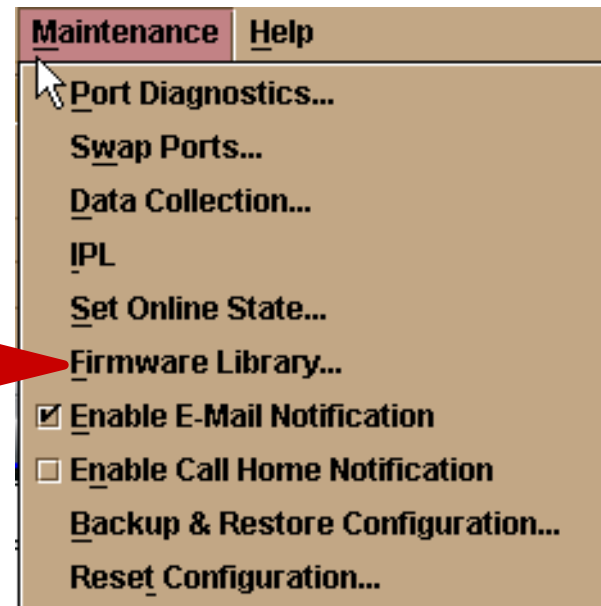
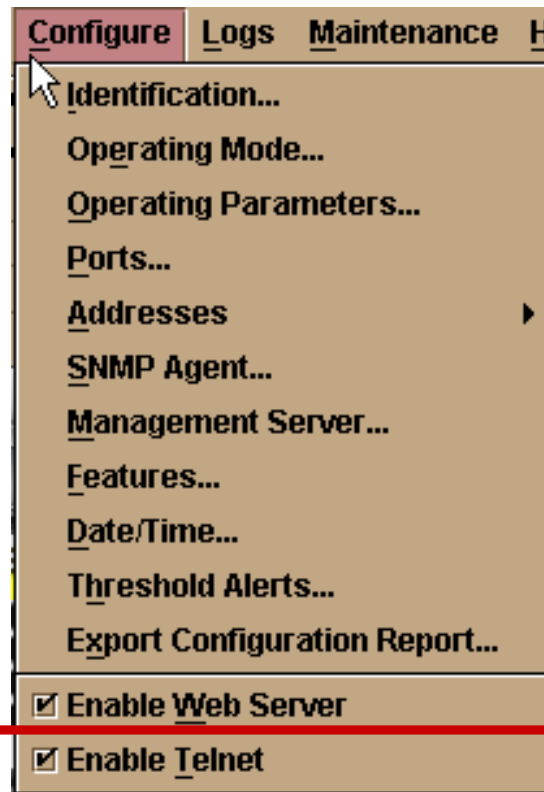
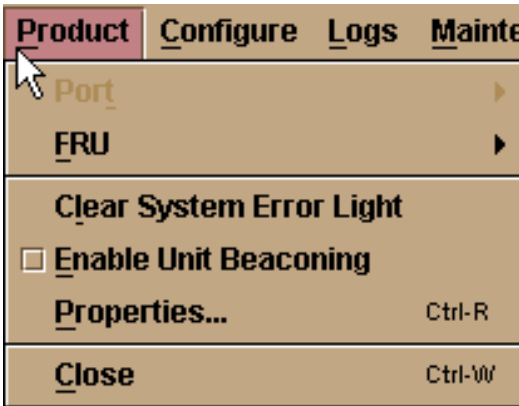
# 2032 (Pull-downs - Switch Not Opened)

Pull-down selections from navigation tabs before a switch is opened



# 2032 (Pull-downs - Switch Opened)

Pull-down selections from navigation tabs **after** a switch is opened

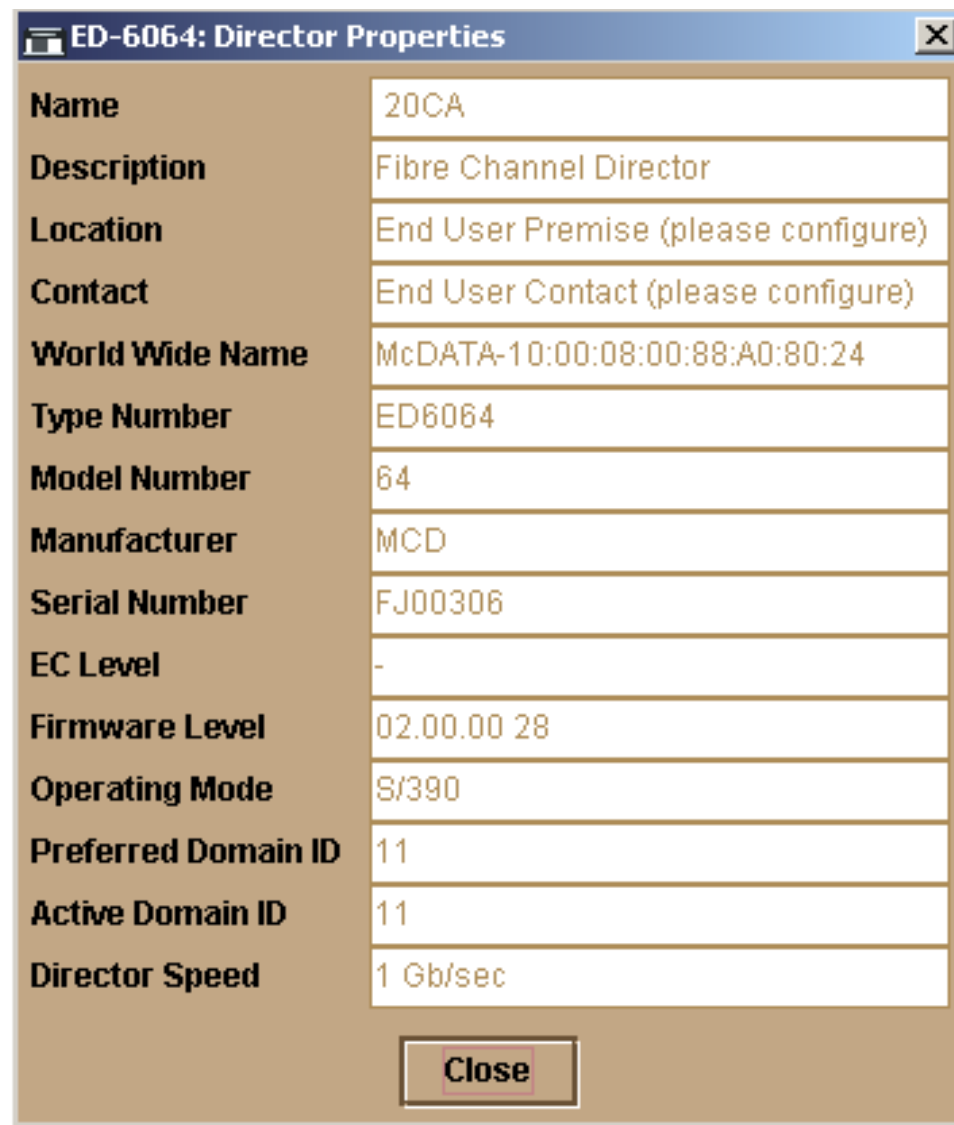
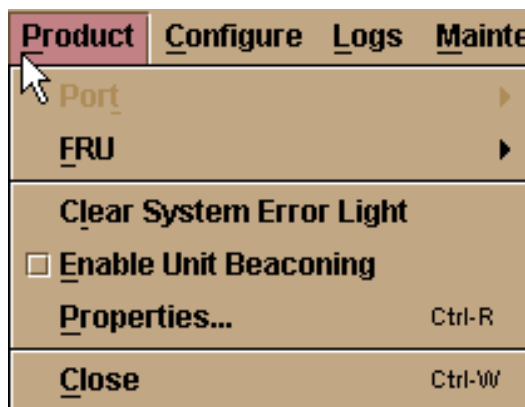


Switch code level here



# 2032 General Navigation windows (1 of 2)

By Selecting 'Properties' from the 'Product' Pull-down, useful information can be obtained about the director





# 2032 General Navigation windows (2 of 2)

By selecting 'Operating Mode' you can set Open Systems or S/390 mode

The screenshot shows a window titled "ED-6064: Configure Addresses - IPL". It contains a table with columns for "Addr", "Port Name", "Blocked", and hexadecimal addresses from 04 to 13. The "Blocked" column has checkboxes, with 04 checked and 05 and 06 marked with a red prohibition sign. A menu is open on the left with "Addresses" selected. A text box explains that from 'Addresses' you can select active or saved configurations and block/prohibit functions. Another text box explains that selecting 'Management Server' allows setting active=saved and enabling host control. At the bottom are "Activate", "Save", "Save As...", and "Cancel" buttons.

Addr	Port Name	Blocked	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13
04		<input checked="" type="checkbox"/>																
05		<input type="checkbox"/>			<input type="checkbox"/>													
06		<input type="checkbox"/>			<input type="checkbox"/>													
07		<input type="checkbox"/>																
08		<input type="checkbox"/>																
09		<input type="checkbox"/>																
0A		<input type="checkbox"/>																
0B		<input type="checkbox"/>																
0C		<input type="checkbox"/>																
0D		<input type="checkbox"/>																
0E		<input type="checkbox"/>																
0F		<input type="checkbox"/>																
10		<input type="checkbox"/>																
11		<input type="checkbox"/>																
12		<input type="checkbox"/>																
13		<input type="checkbox"/>																

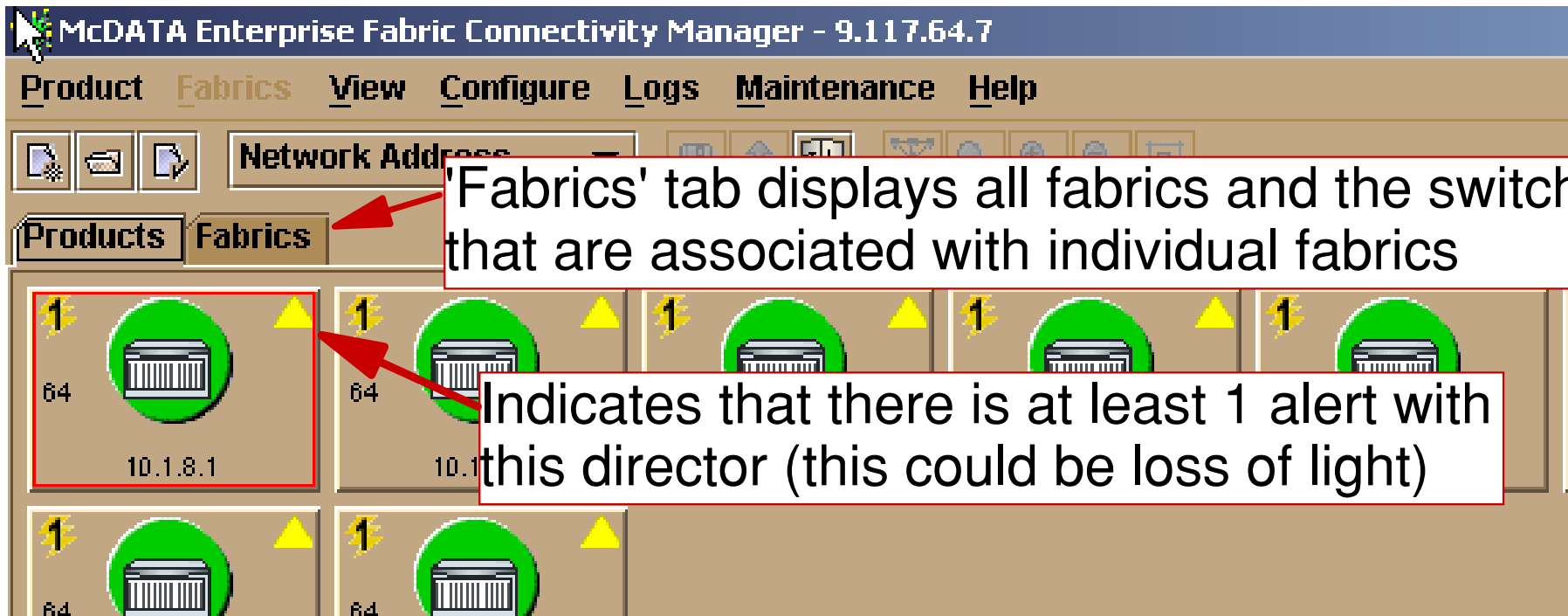
From 'Addresses' you may select either an active or saved configuration. Blocking or prohibiting functions can be done from this panel, they can be saved and activated using the buttons below

By selecting 'Management Server' you can set active=saved and enable host control

Activate Save Save As... Cancel

# 2032 (McData Director PD flow)

Now, Lets take a look at some navigational techniques to identify errors and/or connectivity issues



The screenshot shows the McDATA Enterprise Fabric Connectivity Manager interface. The title bar reads "McDATA Enterprise Fabric Connectivity Manager - 9.117.64.7". The menu bar includes "Product", "Fabrics", "View", "Configure", "Logs", "Maintenance", and "Help". Below the menu bar is a toolbar with icons for file operations and a "Network Address" field. The main content area has two tabs: "Products" and "Fabrics". The "Fabrics" tab is selected, and it displays a grid of switch icons. Each icon is a green circle containing a white switch icon, with a yellow triangle and the number "1" in the top left corner, indicating an alert. The first icon in the top row is highlighted with a red box. A red arrow points from the "Fabrics" tab to the first icon, and another red arrow points from the first icon to the text box below it.

'Fabrics' tab displays all fabrics and the switches that are associated with individual fabrics

Indicates that there is at least 1 alert with this director (this could be loss of light)

Once you 'log in' the 'Products' or 'Fabrics' tab may be selected.

The 'Products' tab displays all switches across all fabrics that the EFCM may communicate with.



# 2032-64 (McData 6064)

Once a switch is opened, pull-downs and tabs located along top are available for navigation. The Hardware tab view (shown here)

Hardware Node List Port List Performance FRU List

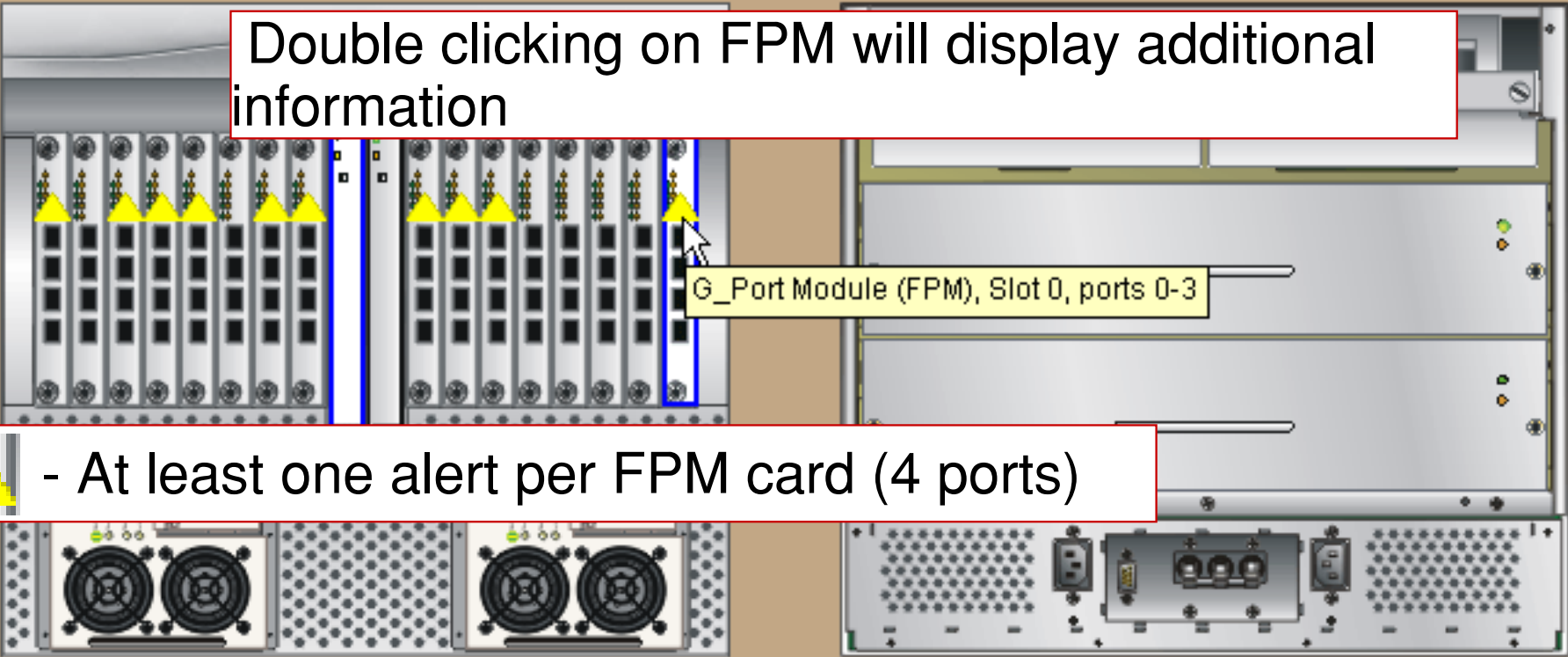
## ED-6064 Status

Status	Fully Operational	Name	20CA
State	Online	Description	Fibre Channel Director
		Location	End User Premise (please configure)

Double clicking on FPM will display additional information

G\_Port Module (FPM), Slot 0, ports 0-3

- At least one alert per FPM card (4 ports)



Front View

Rear View

# 2032-64 FPM View

Hardware Node List Port List Performance FRU List

FRU Name	G_Port Module (FPM)
Position	Slot 0
State	Active
Beaconing	Off
Part Number	470-000439-004
Serial Number	80500713

ED-6064: Port Properties

Port Number	1
Port Name	
Type	F_Port
Operating Speed	1 Gb/sec
Fibre Channel Address	6B0513
Port WWN	McDATA-20:05:08:00:88:A0:80:24
Attached Port WWN	Emulex-10:00:00:00:C9:2A:0A:A0
Block Configuration	Unblocked
10-100 km Configuration	On
LIN Alerts Configuration	On
Beaconing	Off
Link Incident	Loss-of-signal
Operational State	Online
Reason	

Back To Full View

Double clicking on port displays "Port Properties" Pop-up window

Note - Loss of signal indicated here. But how can we determine what was attached?

Close

# 2032-64 (Node List)

The 'Node List' tab will list all ports, good info, all port numbers and logical addresses are displayed

Port #	Addr	Node Type	Port WWN
0	04	Channel path 86	Emulex-10:00:00:00:C9:2A:0A:57
1	05	Channel path 67	Emulex-10:00:00:00:C9:2A:0A:A0
3	07	Channel path 91	Emulex-10:00:00:00:C9:2A:0A:7B
5	09	Direct access storage	00:00:C1:17:68
6	0A	Direct access storage	00:00:C5:17:68
7	0B	Direct access storage	00:00:CA:16:37
8	0C	Reserved	00:00:C9:23:2A:7B
17	15	Unspecified	00:00:C9:25:2E:BB
18	16	Unspecified	00:00:C9:22:94:AC
20	18	Channel path 99	00:00:C9:22:94:65
22	1A	Channel path B3	00:00:C9:22:94:00
23	1B	Channel path A5	00:00:C9:22:80:F7
24	1C	Channel path BD	00:00:C9:22:64:12
25	1D	Channel path BE	00:00:C9:22:81:12
26	1E	Channel path C4	00:00:C9:22:84:1D
29	21	Channel path FF	00:00:C9:22:85:0C
30	22	Channel path FB	00:00:C9:22:82:CD
31	23	Channel path D0	00:00:C9:2A:0A:73
32	24	Channel path B6	01:10:00:CA
33	25	Channel path D5	00:00:C9:28:5C:60
			01:10:00:C2
			01:10:01:27
			00:00:C9:2A:0B:E1
			01:60:01:F5
			01:60:02:6E
			01:10:00:E3
			01:10:00:EF
			Emulex-10:00:00:00:C9:2A:16:93

**ED-6064: Node Properties**

Port Number: 1

Port Address: 05

Node Type: Channel path 67

Port WWN: Emulex-10:00:00:00:C9:2A:0A:A0

Port Nickname:

Node WWN: IBM-50:05:07:64:00:C1:1A:75

Node Nickname:

Buffer to Buffer Credit: 64

Class of Service: Class 2, 3

Data Field Size: 2048

Type: 002064

Model: 116

Serial #: 02000000011A75

Tag: 6705

Close

Double clicking will display 'Node Properties' Pop-up

# 2032-64 (Port List)

[Product](#) [Configure](#) [Logs](#) [Maintenance](#) [Help](#)

[Hardware](#) [Node List](#) [Port List](#) [Performance](#) [FRU List](#)

#	Addr	Name	Block Config	State	Type	Operating
0	04		Unblocked	Online	F_Port	1 Gb/sec
1	05		Unblocked	Online	F_Port	1 Gb/sec
2	06		Unblocked	No Light	G_Port	1 Gb/sec
3	07		Unblocked	Online	F_Port	1 Gb/sec
4	08		Unblocked	No Light	G_Port	1 Gb/sec
5	09		Unblocked	Online	F_Port	1 Gb/sec
6	0A					1 Gb/sec
7	0B					1 Gb/sec
8	0C					1 Gb/sec
9						1 Gb/sec
10						1 Gb/sec
11						1 Gb/sec
12						1 Gb/sec
13						1 Gb/sec
14						1 Gb/sec
15						1 Gb/sec
16						1 Gb/sec
17						1 Gb/sec
18						1 Gb/sec
19						1 Gb/sec
20						1 Gb/sec
21	19					1 Gb/sec
22	1A					1 Gb/sec
23	1B					1 Gb/sec
24	1C					1 Gb/sec
25	1D					1 Gb/sec
26	1E					1 Gb/sec
27	1F					1 Gb/sec
28	20					1 Gb/sec
29	21					1 Gb/sec
30	22					1 Gb/sec

Example of 'Port List', note that double clicking from this panel gives you 'Port Properties' Pop-up

**ED-6064: Port Properties** [X]

**Port Number** 5

**Port Name**

**Type** F\_Port

**Operating Speed** 1 Gb/sec

**Fibre Channel Address** 6B0913

**Port WWN** McDATA-20:09:08:00:88:A0:80:24

**Attached Port WWN** IBM-50:05:07:63:00:C1:17:68

**Block Configuration** Unblocked

**10-100 km Configuration** On

**LIN Alerts Configuration** On

**Beaconing** Off

**Link Incident** None

**Operational State** Online

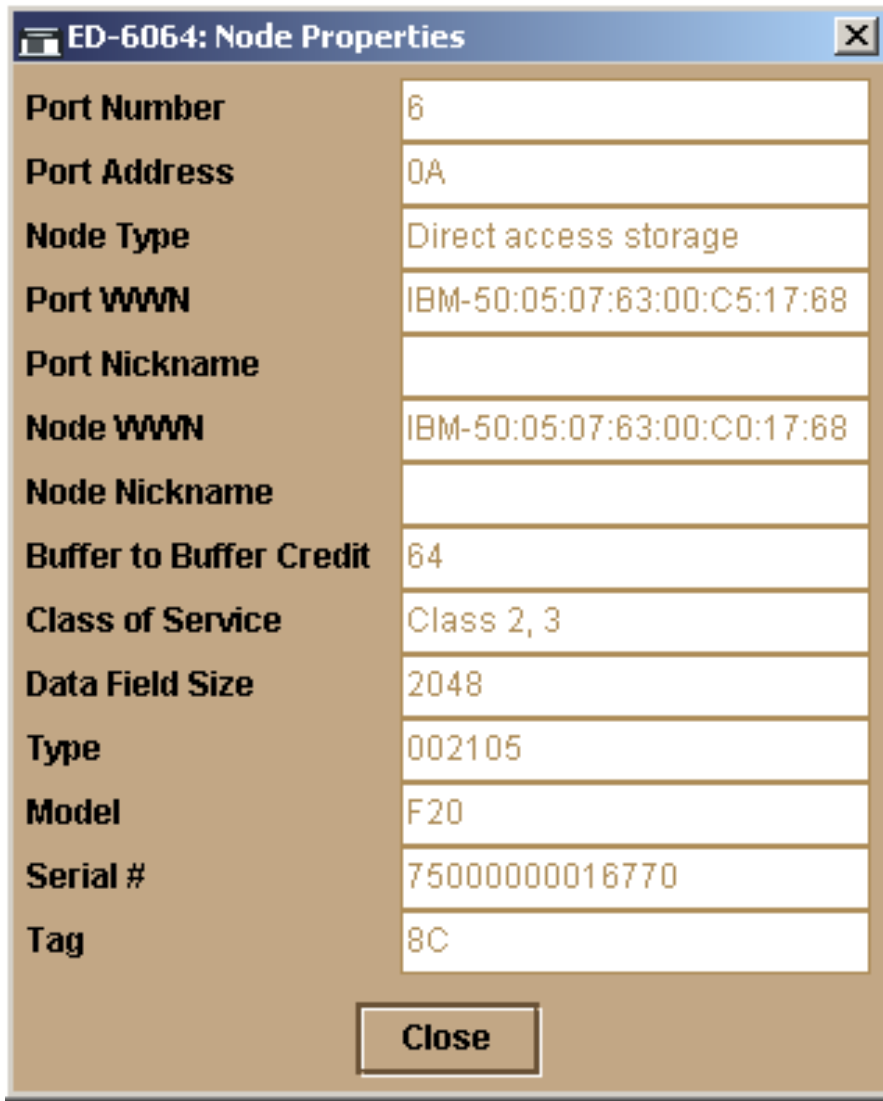
**Reason**

**Threshold Alert**

**Close**

# 2032-64 (Node and Port List)

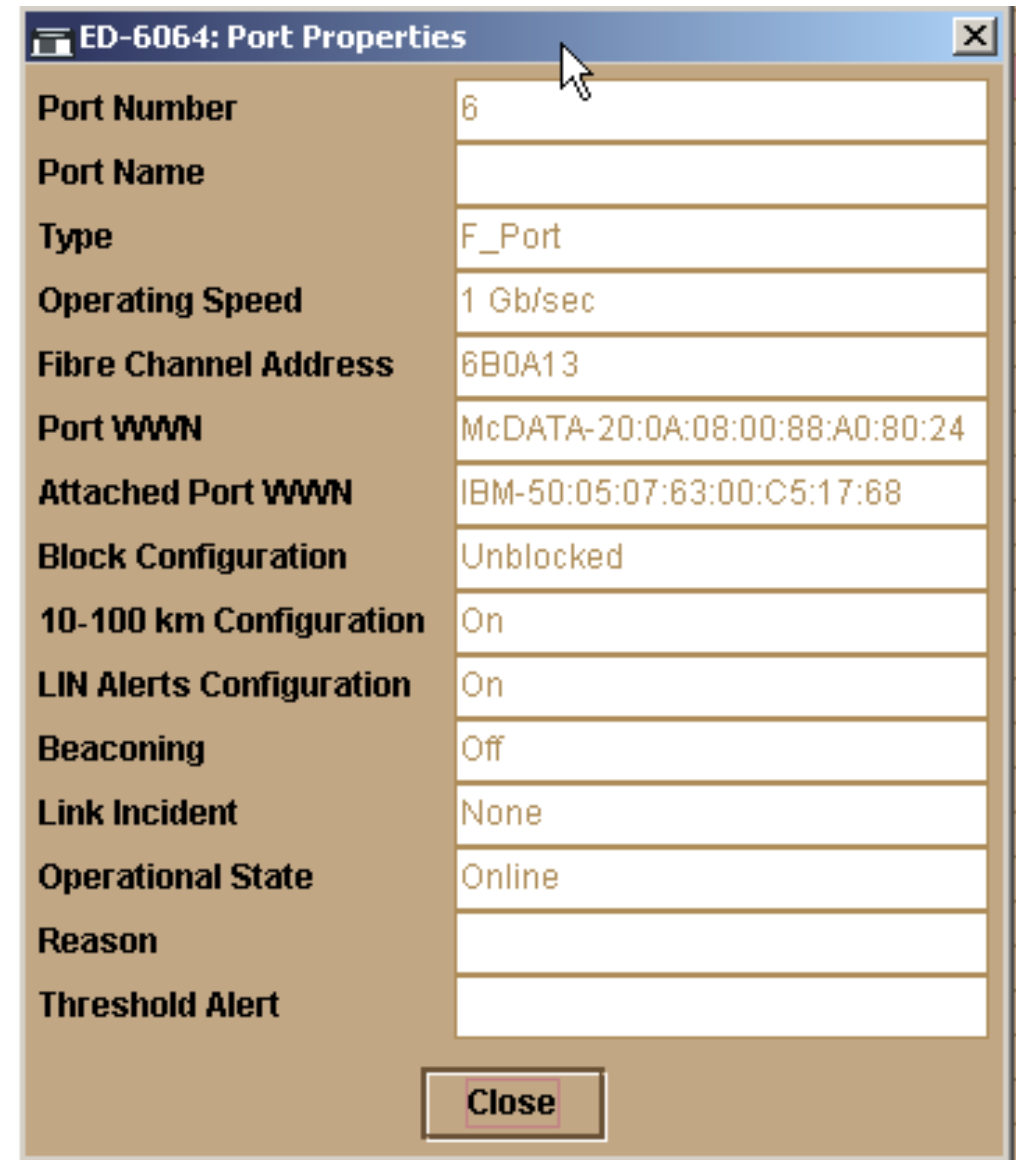
There are 2 different Pop-up windows that can be of use for PD purposes



ED-6064: Node Properties

Port Number	6
Port Address	0A
Node Type	Direct access storage
Port WWN	IBM-50:05:07:63:00:C5:17:68
Port Nickname	
Node WWN	IBM-50:05:07:63:00:C0:17:68
Node Nickname	
Buffer to Buffer Credit	64
Class of Service	Class 2, 3
Data Field Size	2048
Type	002105
Model	F20
Serial #	75000000016770
Tag	8C

Close



ED-6064: Port Properties

Port Number	6
Port Name	
Type	F_Port
Operating Speed	1 Gb/sec
Fibre Channel Address	6B0A13
Port WWN	McDATA-20:0A:08:00:88:A0:80:24
Attached Port WWN	IBM-50:05:07:63:00:C5:17:68
Block Configuration	Unblocked
10-100 km Configuration	On
LIN Alerts Configuration	On
Beaconing	Off
Link Incident	None
Operational State	Online
Reason	
Threshold Alert	

Close

# zSeries Educational Offerings

## Sysplex / zSeries course offerings

- ▶ H4016 (2 days) HMC Class
- ▶ H4041 (3) Plex Ops & Recovery (sysplex only)
- ▶ H4057 (5) Plex Ops & Recovery (H4016 & H4041)
- ▶ ES900 (5) Advanced Plex Recovery
- ▶ ES420 (4.5) Plex Implementation
- ▶ ES830 (5) CSAR (Complex Systems Availability & Recovery)
- ▶ ES820 (2) zSeries Mainframe Environment (A Technical Overview)
- ▶ OZ09 (2) z/Architecture for z900
- ▶ OZ05 (2) z990 Technical Update & Configuration Requirements
- ▶ ES321 (2) FICON Environment (Native & Bridge)