



z/OS I/O Discovery and Auto Configuration (zDAC) 2.1 Update

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Agenda

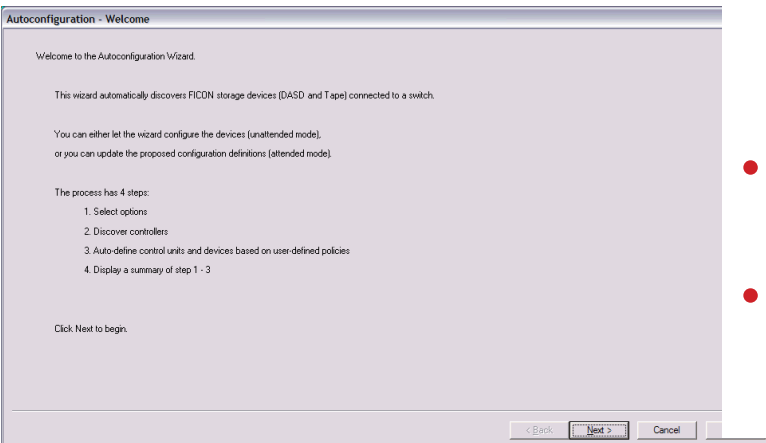
- Discovery and Autoconfiguration Overview
 - What is zDAC?
 - zDAC goals and considerations
 - Autoconfiguration policy options
 - How zDAC works
- New features in z/OS 2.1
- Demo
- Q&A

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What is Discovery and Autoconfiguration (zDAC)?



```
z/OS V1.12 HCD
Command ==>
Hardware Configuration
Select one of the following.
0 0. Edit profile options and policies
1 1. Define, modify, or view configuration data
2 2. Activate or process configuration data
3 3. Print or compare configuration data
4 4. Create or view graphical configuration report
5 5. Migrate configuration data
6 6. Maintain I/O definition files
7 7. Query supported hardware and installed UIMs
8 8. Getting started with this dialog
9 9. What's new in this release
For options 1 to 5, specify the name of the IODF to be used.
I/O definition file . . . 'IODFST.IODF68'
```

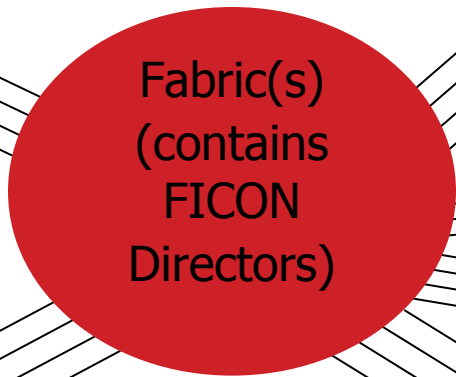


- New feature of z196 (and z114)
 - Invoked as a new option Hardware Configuration Dialog (HCD) and Hardware Configuration Manager (HCM)
- Provides capability to discovery attached disk and tape controllers in FICON switch fabrics (2.1 supports point to point)
- Detects
 - New controllers (storage subsystems)
 - New control units on existing controllers
 - New devices on existing control units
- Proposes control unit and device numbering
- Proposes paths for all discovery systems to newly discovered control units

zDAC Goals

- Reduce complexity and skill required to configure devices
- Reduce the time it takes to make I/O configuration changes
- Ensure the defined configuration aligns with reality
- Ensure that high availability expectations are met in the configuration
- Support older as well as newer controllers

Sample Configuration



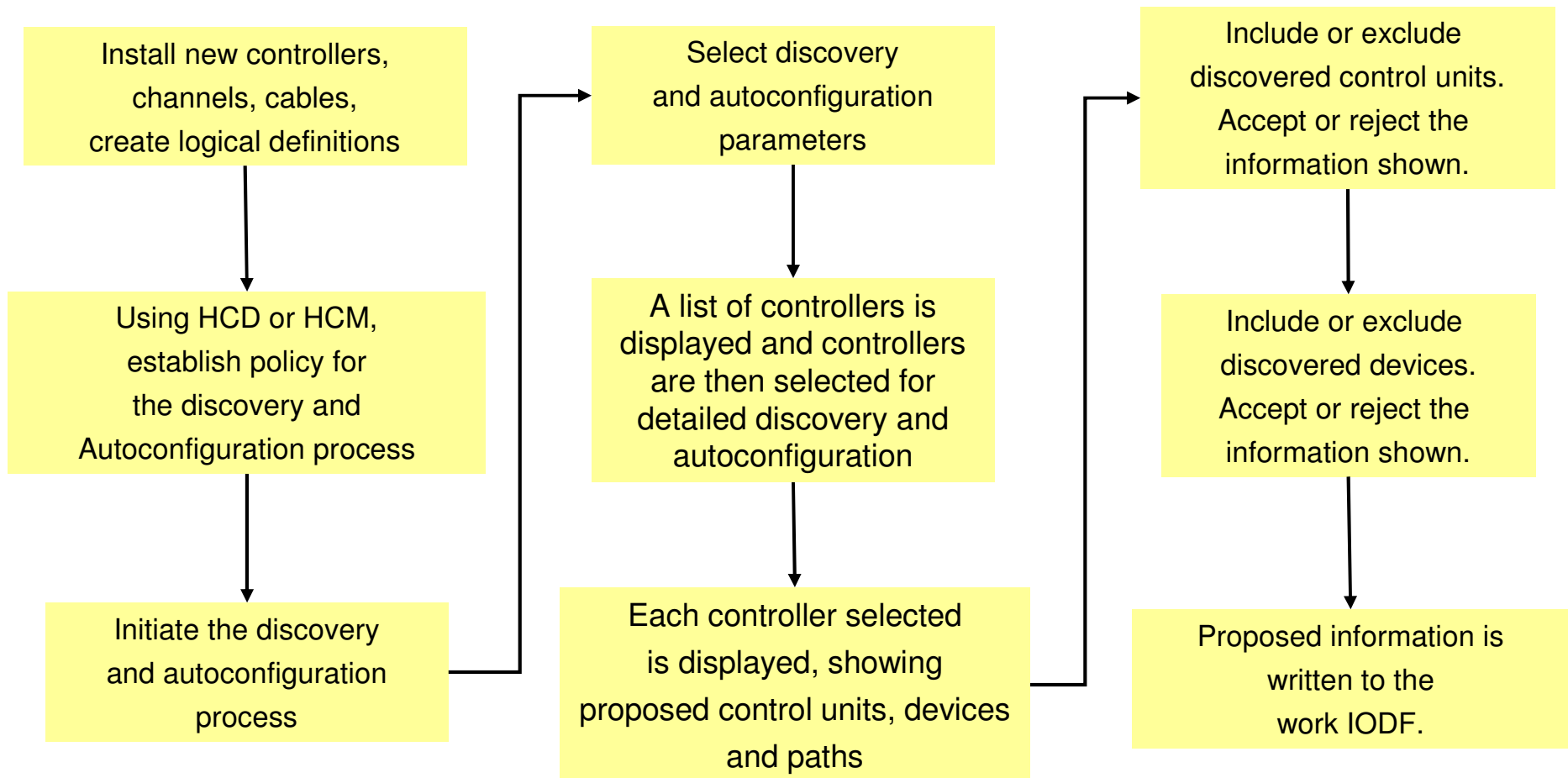
**Point to point
(z/OS 2.1 only)**



Some Things to Consider...

- Physical planning is still up to you
- Logical definitions on the controller are still up to you
- What z/OS images should be allowed to use the new devices?
- How should new devices be numbered?
- How many paths to new control units should be configured?

Discovery and Autoconfiguration Steps

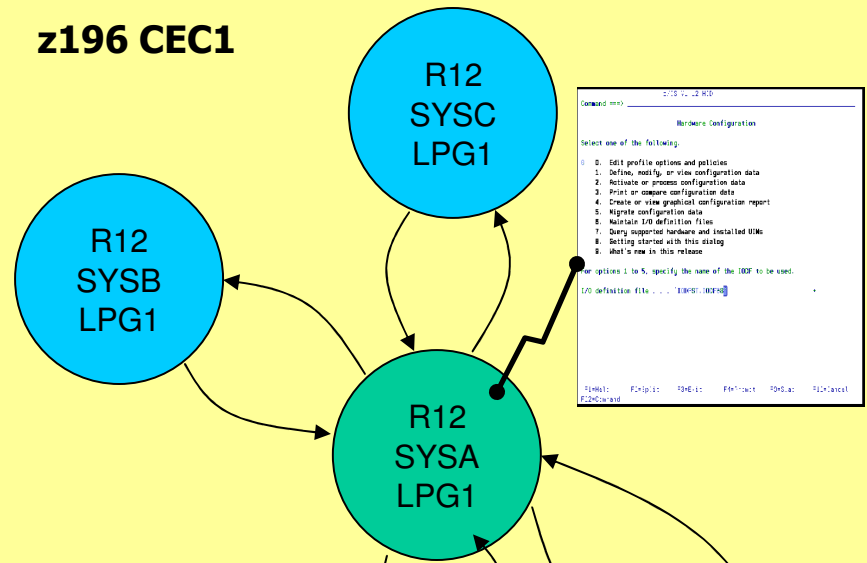


Controlling Discovery Scope

- AUTO_SUG_LPGROUP
- Specify LPARs that will participate in the discovery attempt
- Specify LPGROUP in policy
- Isolate scope to those systems and processors that have the capability to perform the function.
- Isolate scope to those systems to have access to discovered items

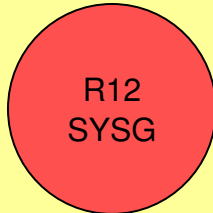
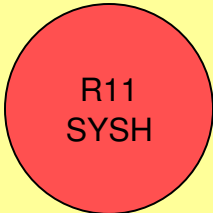
S
Y
S
P
I
E
X

z196 CEC1

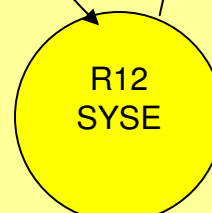
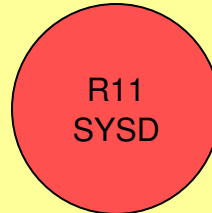


```

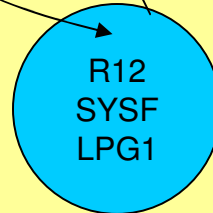
Command: 2725 11.12 R00
Hardware Configuration
Select one of the following:
0. Edit profile options and policies
1. Define, modify, or view configuration data
2. Activate or promote configuration data
3. Print or compare configuration data
4. Create or view graphical configuration report
5. Migrate configuration data
7. Query supported hardware and installed items
8. Getting started with this dialog
9. What's new in this release
For options 1 to 5, specify the name of the LODF to be used:
LODF definition file: . . . [Browse]
  
```



z10 CEC3



z196 CEC2



Controlling Control Unit & Device Numbering



- AUTO_MATCH_CU_DEVNUM
 - YES - CU Number matches 1st base
 - NO – Does not have to match the 1st base
- AUTO_SS_ALTERNATE
 - Controls where aliases are placed
- AUTO_SS_DEVNUM_SCHEME
 - Identifies how devices are to be numbered
 - PAIRING (default)
 - CONSECUTIVE
 - DENSE
 - **NONE (z/OS 2.1)**
- AUTO_SUG_CU_RANGE
- AUTO_SUG_DEV_RANGE

Add 2 new control units, each with 64 bases and 64 aliases

PAIRING Example

**CUNUM=2000, BASES=02000-0203F,
ALIASES=120C0-120FF**
**CUNUM=2080, BASES=02080-020BF,
ALIASES=12040-1207F**

CONSECUTIVE Example

**CUNUM=2000, BASES=02000-0203F,
ALIASES=12040-1207F**
**CUNUM=2100, BASES=02100-0213F,
ALIASES=12140-1217F**

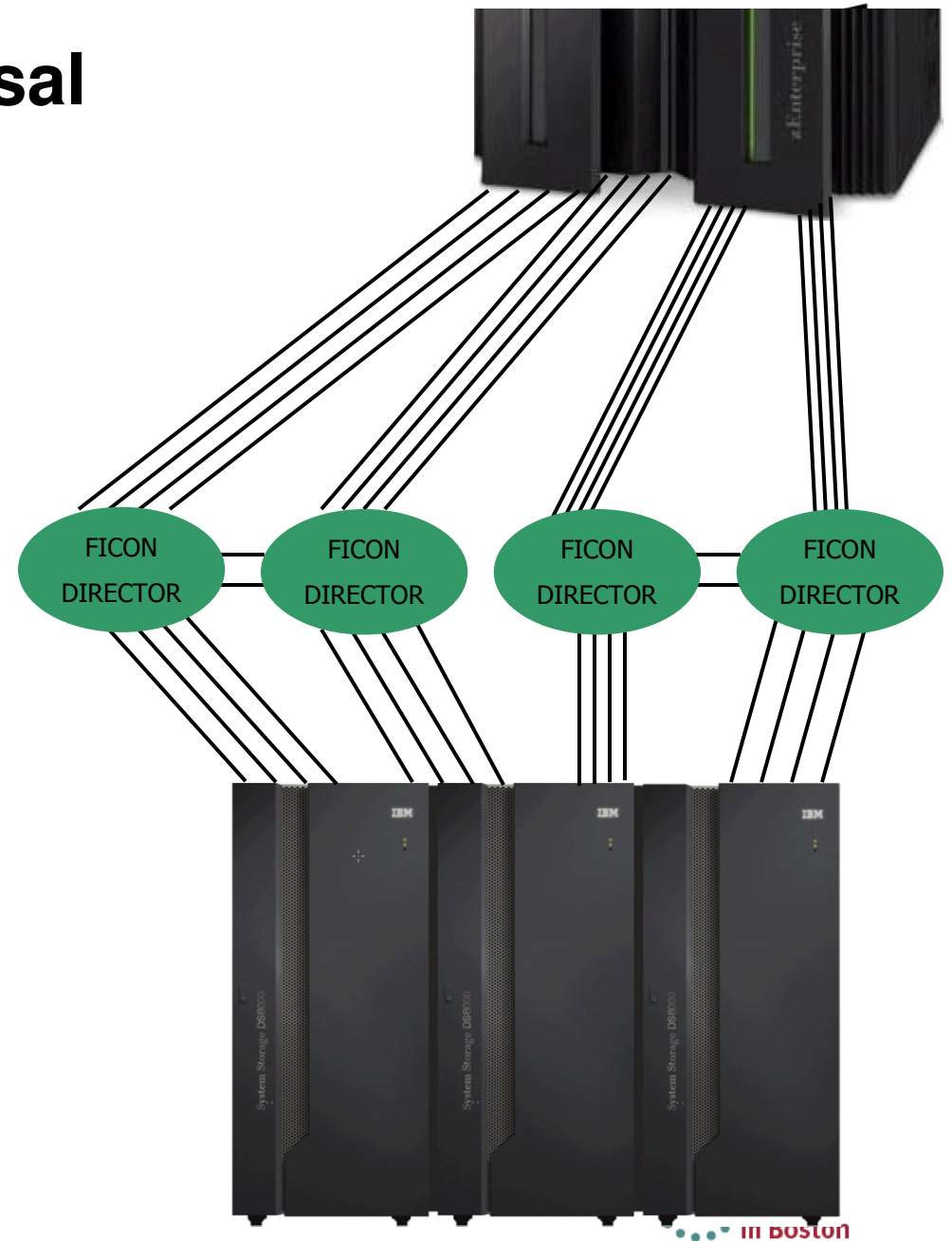
DENSE Example

**CUNUM=2000, BASES=02000-0203F,
ALIASES=12000-1203F**
**CUNUM=2100, BASES=02100-0213F,
ALIASES=12100-1213F**

Controlling Path Proposal

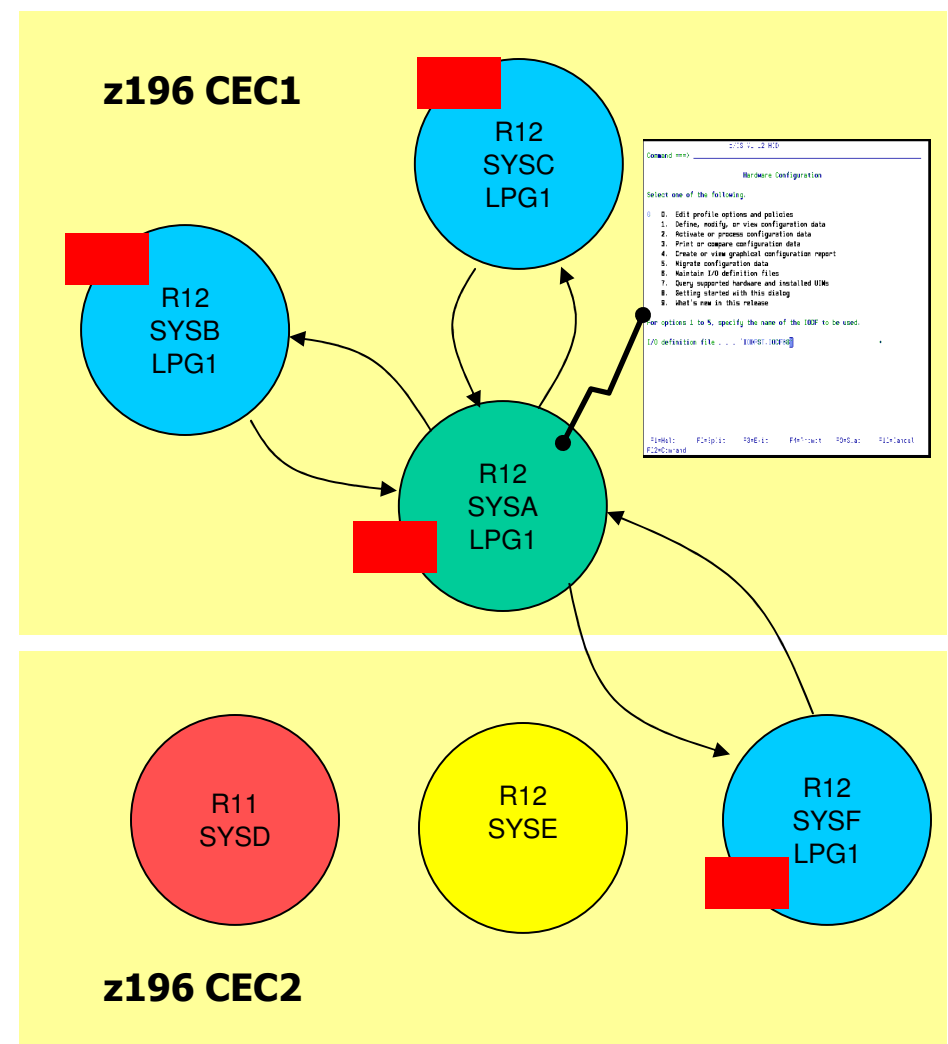
- AUTO_SUG_STAT_CHPIDSD
 - 1 – 8, indicating the number of static paths that should be proposed for new control units
- AUTO_SUG_DYN_CHPIDSD
 - 0-7, indicating the number of dynamic paths that should be proposed for new control units
- AUTO_SUG_STAT_CHPIDSD + AUTO_SUG_DYN_CHPIDSD ≤ 8
- Cascaded Switches Are OK

More on Path Proposal
Processing Later...



How Discovery Works – Fabric Discovery

- Discovery is initiated using HCD or HCM
- Through policy, the scope of the discovery is defined
- Discovery devices are added to the target systems using dynamic I/O configuration changes
- To explore the connected fabrics, the devices are connected to channels using dynamic I/O configuration changes and I/O commands are performed to determine what is “out there.”
- Discovered information is compared against the target IODF to determine what is new
- Information is organized and a list of discovered controllers is displayed to the user



How Discovery Works – Fabric Discovery...



- The controller list has a line for each discovered controller
- Information displayed is read from each controller
- New: Yes or No – set based on whether the controller has any control unit definitions within the discovery scope
- One or more controllers can be selected for Controller Discovery

```
Discovery and Autoconfiguration Options
-----
Discovered New or Changed Controller List
-----
S d Policy Backup Query Help
-----
A Command ==> _____ Scroll ==> HALF Row 1 of 59
S Select one or more controllers to be defined, then press
  Enter.
S
S F T
  / Type Model Manufacturer Name Plant Serial-# New Processed
  - 2105 800 IBM 13 22212 Yes No
  - 2105 800 IBM 13 22220 Yes No
  - 2105 800 IBM 23 24962 Yes No
  - 2105 800 IBM 75 25924 Yes No
  - 2105 800 IBM 13 28641 Yes No
  - 2105 800 IBM 75 29228 Yes No
  - 2105 800 IBM 75 29821 Yes No
  - 2105 800 IBM 75 29949 Yes No
  - 2105 800 IBM 75 29958 Yes No
  - 2107 921 EMC 08 AAGFZ Yes No
  - 2107 921 EMC 08 AGMBP Yes No
  - 2107 961 IBM 75 BBV41 Yes No
```



How Discovery Works – Controller Discovery...



```

----- Proposed Control Unit List -----
Row 1 of 96
Command ==> _____ Scroll ==> HALF
Control unit type . . : 2107-961      Serial number : ZA591
Proposed switch.ports :

To accept the proposed values, press Enter. To modify them, edit the
fields, or select one or more control units to change, exclude or include
the corresponding definitions, then press Enter.

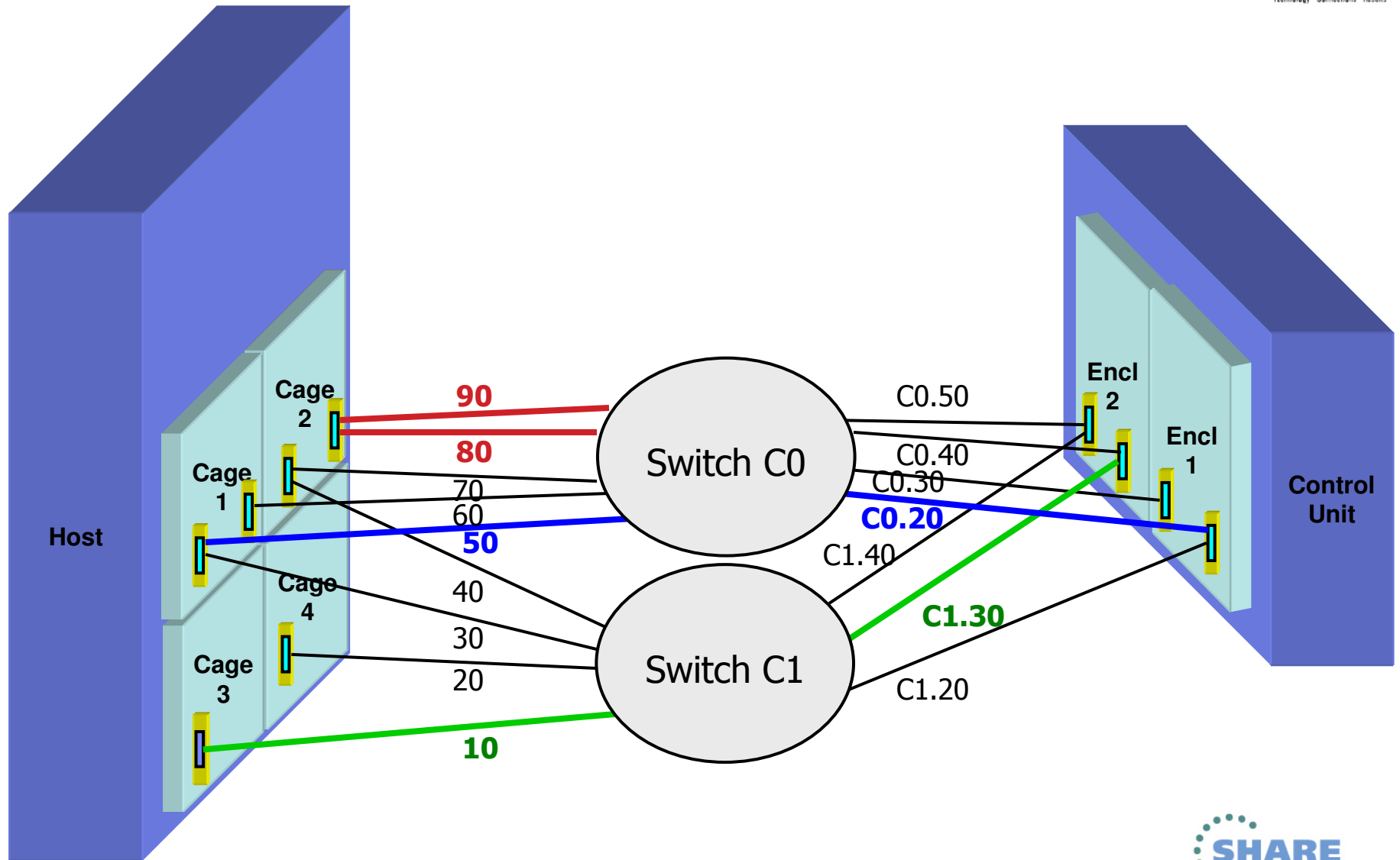
  CU   CU   # of   LPAR
 / ADD number+ devices Access+ New Description I
- 00   0300   256   P87R7D   Yes _____ Y
- 01   0400   256   P87R7D   Yes _____ Y
- 02   0600   256   P87R7D   Yes _____ Y
- 03   0700   256   P87R7D   Yes _____ Y
- 04   0C00   256   P87R7D   Yes _____ Y
- 05   0D00   256   P87R7D   Yes _____ Y
- 06   0F00   256   P87R7D   Yes _____ Y
- 07   2100   256   P87R7D   Yes _____ Y
    
```



Philosophy on Path Proposal

- Policy suggests # of paths to be selected (i.e., 4 statics)
- The channels that can reach the controller are compared against each other to determine the best channels to use
 - Single points of failure (common hardware components)
 - Switch
 - Channel card
 - I/O cage
 - Current definitions (how many unit addresses and control units are currently configured to use the channel)
- Once a set of channels is selected, destination link addresses are chosen in a similar manner

Path Proposal: Avoiding Single Points of Failure



What's New in z/OS 2.1?

- Point to point connections supported
- Profile option to allow you to manually specify control unit and device numbers
- Channel path/switch inclusion/exclusion lists
- Discovery by controller serial number
- Autoconfiguration policies can be changed between two subsequent controller discoveries
- Inactive or incapable systems are ignored during discovery
- SAVE command supported on panels containing the discovered information

zDAC Support for Point to Point

- z/OS 2.1 must be used to initiate the discovery
- Only z/OS 2.1 systems in the LPAR group will return discovery information
- Point to point connections preferred over switched point to point
 - zDAC will never propose a mix of the two
- Path proposal still considers channel and control unit single points of failure

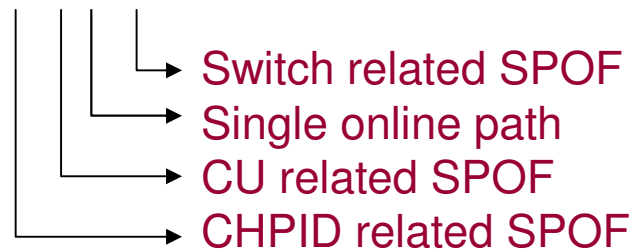
Verify a Configuration via zDAC

- Prior to z/OS 2.1, required Tivoli System Automation (TSA) I/O Operations (priced product)
- With z/OS 2.1, zDAC is used to discover the active configuration
 - Requires z196 / z114 or higher processor
 - Only done if TSA I/O Operations is not operational
 - System to run report must be part of local sysplex
 - Device and path status information only available if run against the local system

Single Point of Failure Info for I/O Path

- Today, for local system, STAT column contains the status of each channel path
 - Online (Blank)
 - Offline (OFFL)
 - Unknown (UNKN)
- For local system, if path online, STAT contains single point of failure information:

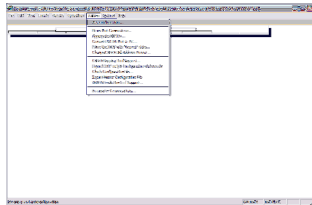
----I/O Path-----			-----Sensed Data...		
CHP	CU	DEV	STAT	CHT	CUTYPE
80	2000	2000,144	#CPS	FC_S	2107-941



Requirements

- Systems running z/OS Version 1 Release 12 or later (native)
 - z/OS 2.1 is needed for the enhanced functions
- z196/z114 processor or higher
- LPAR authorized to make dynamic I/O configuration changes on each processor hosting a discovery system
- HCD or HCM user authorized to make dynamic I/O configuration changes (has UPDATE authority for MVS.ACTIVATE OPERCMDS resource)

Demo



```
Session B - BOETRX2 - [32 x 80]
File Edit View Communication Actions Window Help
[Icons]
CBDPDAC4 Proposed Control Unit / Device List
Discovery and Autoconfiguration Options
-----
CBDPDAC1
Specify autoconfiguration options. Then, press Enter to start the
discovery process.

Autoconfiguration is based on 1 1. Active IODF
                               2. Currently accessed IODF

Show proposed definitions . . 1 1. Yes
                               2. No

Scope of discovery . . . . . 2 1. New controllers only
                               2. All controllers
                               3. Controller containing CU _____ +

Force full mode discovery . . 2 1. Yes
                               2. No

Target IODF name . . . . . '_BOKA.IODF01.WORK.ZDAC' +

F1=Help   F2=Split   F3=Exit   F4=Prompt   F5=Reset   F9=Swap
F12=Cancel

CBDG749 FABRIC discovery in progress - please wait ... ***** Y

F1=Help   F2=Split   F3=Exit   F4=Prompt   F5=Reset   F7=Backward
F8=Forward F9=Swap   F12=Cancel F22=Command

MA b X 21/028
Connected to remote server/host BOETRX2 using lu/pool IPSXC01 and port 23
```



Reference Material

- z/OS V2R1 HCD User's Guide, SC33-7988
- z/OS V2R2 and z/VM V6R1.0 HCM User's Guide, SC33-7989
- IBM zEnterprise 196 Configuration Setup, SG24-7834
- z/OS Intelligent Resource Director, SG24-5952

Thank you



Backup Screen Shots

If demo is not available...

Discovering with HCD

Command ==> _____

Hardware Configuration

Select one of the following.

- 0. Edit profile options and policies
 - 1. Define, modify, or view configuration data
 - 2. Activate or process configuration data
 - 3. Print or compare configuration data
 - 4. Create or view graphical configuration report
 - 5. Migrate configuration data
 - 6. Maintain I/O definition files
 - 7. Query supported hardware and installed UIMs
 - 8. Getting started with this dialog
 - 9. What's new in this release

For options 1 to 5, specify the name of the IODF to be used.

I/O definition file . . . 'IODFST.IODF68'

HCD Profile Options



```
C Profile Options and Policies
S
O
Select type of data to define.
1. HCD profile options
2. Autoconfiguration policies
3. LP groups for autoconfiguration
4. OS groups for autoconfiguration

F1=Help    F2=Split    F3=Exit    F9=Swap    F12=Cancel
```

- 7. Query supported hardware and installed UIMs
- 8. Getting started with this dialog
- 9. What's new in this release

For options 1 to 5, specify the name of the IODF to be used.

```
I/O definition file . . . 'IODFST.IODF68' +
```



HCD LPAR Groups



Autoconfiguration LP Group List

Row 1 of 14

Command ==> _____ Scroll ==> CSR

To view assigned partitions, select one or then press Enter. To add an LP group, use F

/ LP group name	Description
█ PLX5	R87/R89 MAS'A' / MAS 'B'
_ PLX5ALL	R87/R89 MAS'A' / MAS 'B'
_ R87MASB	R87-S50,1,2,5,8,9
_ R87R89A	R87-S5B,C,E,H R89-S5A,D,F
_ R87R89B	R87-S50,1,5 R89-S52,8,9
_ R87R89NG	R87/S5089C R89/S51257
_ R87S5015	R87-S50,1,5
_ R87S55	R87-S55
_ R87S589	R87 S58, S59
_ R89MASA	R89-S5A,D,F,G,6
_ R89MASB	R89-S50,1,2,5,8,9
_ R89R87N	S50,S51 R87, R87 S58,S59

F1=Help F2=Split F3=Exit
 F7=Backward F8=Forward F9=Swap
 F12=Cancel F22=Command

Autoconfiguration LP Group List

Row 1 of 2

Command ==> _____ Scroll ==> CSR

Select one or more logical partitions, then press Enter. To add, use F11.

LP group name : R87S589 R87 S58, S59

/ Partition Name	Description
_ R87.2.S58	LPAR S58 on R87 - PLX5
_ R87.3.S59	LPAR S59 on R87 - PLX5

***** Bottom of data *****

F

F1=Help F2=Split F3=Exit F4=Prompt
 F7=Backward F8=Forward F9=Swap F11=Add
 F12=Cancel F22=Command



HCD Autoconfiguration Policy



Autoconfiguration Policies

Row 1 of 13 More: >

Command ==> _____ Scroll ==> HALF

Edit or revise autoconfiguration policies.

HCD Profile : RIEDY.HCD.PROFILE

/ Policy keyword	P	Value +
_ AUTO_CHPID_EXCLUDE	N	_____
_ AUTO_CHPID_INCLUDE	N	_____
# AUTO_MATCH_CU_DEVNUM	Y	YES
# AUTO_SS_ALTERNATE	Y	1
# AUTO_SS_DEVNUM_SCHEME	Y	PAIRING
# AUTO_SUG_CU_RANGE	Y	0001-FFFE
# AUTO_SUG_DEV_RANGE	Y	0001-FFFF
# AUTO_SUG_DYN_CHPIDS	Y	2
# AUTO_SUG_LPGROUP	N	P87R7D
# AUTO_SUG_OSGROUP	N	PLX7
# AUTO_SUG_STAT_CHPIDS	Y	6
_ AUTO_SWAD_EXCLUDE	N	_____
_ AUTO_SWAD_INCLUDE	N	_____

***** Bottom of data *****



CHPID Inclusion/Exclusion List



```
Autoconfiguration Policies
Row 1 of 15 More: >
Command ==> _____ Scroll ==> HALF

Edit or revise autoconfiguration policies.

HCD Profile : RIEDY.HCD.PROFILE

/ Policy keyword      P Value +
_ AUTO_CHPID_EXCLUDE  N P87.0,40
_ AUTO_CHPID_EXCLUDE  N P87.1,41-4F
A AUTO_CHPID_EXCLUDE  N P87.*,50-5F
_ AUTO_CHPID_INCLUDE  N _____
# AUTO_MATCH_CU_DEVNUM Y YES
# AUTO_SS_ALTERNATE   Y 1
# AUTO_SS_DEVNUM_SCHEME Y PAIRING
# AUTO_SUG_CU_RANGE   Y 0001-FFFE
# AUTO_SUG_DEV_RANGE  Y 0001-FFFF
# AUTO_SUG_DYN_CHPIDS Y 2
# AUTO_SUG_LPGROUP    N P87R7D
# AUTO_SUG_OSGROUP    N PLX7
# AUTO_SUG_STAT_CHPIDS Y 6
_ AUTO_SWAD_EXCLUDE   N _____
```



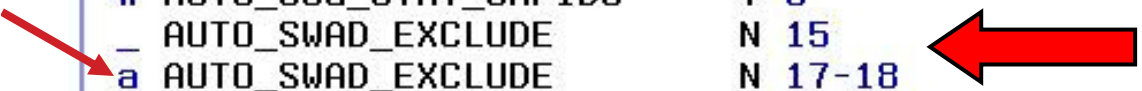
Switch Inclusion/Exclusion Lists

```

Autoconfiguration Policies
Row 7 of 17 More: >
Command ==> _____ Scroll ==> HALF
Edit or revise autoconfiguration policies.
HCD Profile : RIEDY.HCD.PROFILE

/ Policy keyword      P Value +
# AUTO_SS_ALTERNATE   Y 1
# AUTO_SS_DEVNUM_SCHEME Y PAIRING
# AUTO_SUG_CU_RANGE   Y 0001-FFFE
# AUTO_SUG_DEV_RANGE  Y 0001-FFFF
# AUTO_SUG_DYN_CHPIDS Y 2
# AUTO_SUG_LPGROUP    N P87R7D
# AUTO_SUG_OSGROUP    N PLX7
# AUTO_SUG_STAT_CHPIDS Y 6
_ AUTO_SWAD_EXCLUDE   N 15
a AUTO_SWAD_EXCLUDE   N 17-18
_ AUTO_SWAD_INCLUDE   N _____
***** Bottom of data *****

```



No Numbering of CUs or Devices Option

```

Autoconfiguration Policies
-----
HCD Help
-----
Command ==>
Edit or revie Command ==> Scroll ==> HALF
AUTO_SS_DEVNUM_SCHEME

HCD Profile
defines the schema for assigning device numbers to PAV
alias devices in an alternate subchannel set.

/ Policy ke
_ AUTO_CHPI
_ AUTO_CHPI
_ AUTO_CHPI
_ AUTO_CHPI
_ AUTO_CHPI
# AUTO_MATC
# AUTO_SS_A
# AUTO_SS_D
# AUTO_SUG_
# AUTO_SUG_
# AUTO_SUG_
# AUTO_SUG_
# AUTO_SUG_
# AUTO_SUG_

Supported schemas are:

CONSECUTIVE The alias device numbers in an alternate
subchannel set are consecutive to the base
device numbers.

DENSE The device numbers in an alternate subchannel
set are densely assigned, that is the next free
device numbers in the assigned device number
range will be used.

PAIRING Base and alias device numbers are assigned
alternatively starting with for example device
numbers xx00 and xx80 versus xx80 and xx00.
PAIRING is the default.

NONE No new control unit and device numbers assigned.
Newly discovered control units and devices are
presented to the users to let them manually
enter numbers.

```


Start Discovery and AutoConfig Process

Define, Modify, or View Configuration Data

Select type of objects to define, modify, or view data.

1. Operating system configurations
 - consoles
 - system-defined generics
 - EDTs
 - esoterics
 - user-modified generics
2. Switches
 - ports
 - switch configurations
 - port matrix
3. Processors
 - channel subsystems
 - partitions
 - channel paths
4. Control units
5. I/O devices
6. Discovered new and changed control units and I/O devices

F1=Help F2=Split F3=Exit F9=Swap F12=Cancel

Specifying AutoConfiguration Options



```
Discovery and Autoconfiguration Options

Specify autoconfiguration options. Then, press Enter to start the
discovery process.

Autoconfiguration is based on 1 1. Active IODF
                               2. Currently accessed IODF

Scope of discovery . . . . . 1 1. New controllers only
                               2. All controllers
                               3. Controller containing CU _____ +
                               4. Controller with S/N _____

Show proposed definitions . . 1 1. Yes    2. No
Force full mode discovery . . 2 1. Yes    2. No
Tolerate incapable systems    2 1. Yes    2. No

Target IODF name . . . 'IODFST.IODF69.DALES.DEMO' _____ +
```

New option that allows zDAC to ignore LPARs that are inactive or incapable of running zDAC

New discovery by serial number option



Fabric Discovery in Progress



Discovery and Autoconfiguration Options

Specify autoconfiguration options. Then, press Enter to start the discovery process.

```
Autoconfiguration is based on 2 1. Active IODF
                                2. Currently accessed IODF

Scope of discovery . . . . . 1 1. New controllers only
                                2. All controllers
                                3. Controller containing CU  _____ +
                                4. Controller with S/N         _____

Show proposed definitions . . 1 1. Yes    2. No
Force full mode discovery . . 2 1. Yes    2. No
Tolerate incapable systems    2 1. Yes    2. No

Target IODF name . . . 'IODFST.IODF69.DALES.DEMO'      +
```

FABRIC discovery in progress - please wait ...

Discovered Controller List



Discovery and Autoconfiguration Options

Discovered New or Changed Controller List

S Backup Query Help

Row 10 of 84

A Command ==> _____ Scroll ==> CSR

Select one or more controllers to be defined, then press Enter.

	/	Type	Model	Manufacturer		Serial-#	New	Processed	
				Name	Plant				
S	-	2105	F20	IBM	75	14566	Yes	No	
	-	2105	F20	IBM	75	14640	Yes	No	+
	-	2105	F20	IBM	75	14662	Yes	No	
F	-	2105	F20	IBM	75	14931	Yes	No	
	-	2105	F20	IBM	13	17533	Yes	No	
	-	2105	F20	IBM	75	17534	Yes	No	
T	/	2105	800	IBM	13	22212	Yes	No	+
	█	2105	800	IBM	13	22220	Yes	No	
	-	2105	800	IBM	13	22230	Yes	No	ap

F F1=Help F2=Split F3=Exit F4=Prompt
 F7=Backward F8=Forward F9=Swap F10=Actions
 F12=Cancel F13=Instruct F22=Command



Starting Controller Discovery



Discovery and Autoconfiguration Options

Discovered New or Changed Controller List

S Backup Query Help

Row 10 of 84

A Command ==> Scroll ==> CSR

S Select one or more controllers to be defined, then press Enter.

	/	Type	Model	Manufacturer		Serial-#	New	Processed
S	-	2105	F20	IBM	75	14566	Yes	No
	-	2105	F20	IBM	75	14640	Yes	No
	-	2105	F20	IBM	75	14662	Yes	No
F	-	2105	F20	IBM	75	14931	Yes	No
	-	2105	F20	IBM	13	17533	Yes	No
	-	2105	F20	IBM	75	17534	Yes	No
T	/	2105	800	IBM	13	22212	Yes	No
	-	2105	800	IBM	13	22220	Yes	No
	-	2105	800	IBM	13	22230	Yes	No

F F1=Help F2=Split F3=Exit F4=Prompt
 F7=Backward F8=Forward F9=Swap F10=Actions
 F12=Cancel F13=Instruct F22=Command

CONTROLLER discovery in progress - please wait ...



Proposed DASD Control Unit List



Select Processor / CU Row 1 of 22 More: >

Command ==> _____ Scroll ==> CSR

Select processors to change CU/processor parameters, then press Enter.

Control unit number . . . : 4E00 Control unit type . . . : 2105

	-----Channel Path ID . Link Address +-----							
/ Proc.CSSID	1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----
█ R87.1	BF.7325	8B.7424	*	*				
— H89.0								
— H89.1								
— H89.2								
— H89.3								
— MR29.0								
— MR29.1								
— R87.0								
— R87.2								
— R87.3								
— R89.0								
— R89.1								
— R89.2								
— R89.3								
— R92.0								
— R92.1								
— R92.2								
— R92.3								
— T72.0								
— T72.1								
— T72.2								

F1=Help F2=Split F3=Exit F4=Prompt F5=Reset F6=Previous
 F7=Backward F8=Forward F9=Swap F12=Cancel F20=Right F22=Command



List of Proposed DASD Devices



Proposed Control Unit / Device List

Row 1 of 16

Command ==> Scroll ==> CSR

Control unit type . . : 2105-800 Serial number : 22212

To accept the proposed values, press Enter. To modify them, edit the fields, or select one or more device ranges to change, exclude or include the corresponding definitions, then press Enter.

-----Device-----		S	CU	UA	OS	N	Description	I
/	Number	Type+	S	Num	Range	Access+		
_	4E00,110	3390B	0	4E00	00-6D	PLX5	Y	_____Y
_	4E6E,146	3390A	1	4E00	6E-FF	PLX5	Y	_____Y
_	5000,51	3390B	0	5000	00-32	PLX5	Y	_____Y
_	5034,204	3390A	1	5000	34-FF	PLX5	Y	_____Y
_	5100,110	3390B	0	5100	00-6D	PLX5	Y	_____Y
_	516E,146	3390A	1	5100	6E-FF	PLX5	Y	_____Y
_	5200,51	3390B	0	5200	00-32	PLX5	Y	_____Y
_	5234,204	3390A	1	5200	34-FF	PLX5	Y	_____Y
_	5300,110	3390B	0	5300	00-6D	PLX5	Y	_____Y
_	536E,146	3390A	1	5300	6E-FF	PLX5	Y	_____Y
_	5400,53	3390B	0	5400	00-34	PLX5	Y	_____Y
_	5447,185	3390A	1	5400	47-FF	PLX5	Y	_____Y
_	5500,74	3390B	0	5500	00-49	PLX5	Y	_____Y
_	554A,182	3390A	1	5500	4A-FF	PLX5	Y	_____Y
_	5600,74	3390B	0	5600	00-49	PLX5	Y	_____Y
_	564A,182	3390A	1	5600	4A-FF	PLX5	Y	_____Y

***** Bottom of data *****



Displaying a Specific DASD Device



```

Proposed Control Unit / Device List
----- Device / Processor Definition -----
                                                    Row 1 of 1
Command ==> █                               Scroll ==> CSR

Select processors to change device/processor definitions, then press
Enter.

Device number . . . : 4E00          Number of devices . . : 110
Device type . . . . : 3390B

/ Proc.CSSID  SS+  UA+  Time-Out  STADET  Preferred  Device Candidate List
_ R87.1      _   00   No         Yes     _         Explicit   Null
***** Bottom of data *****

F1=Help      F2=Split    F3=Exit     F4=Prompt   F5=Reset
F6=Previous  F7=Backward F8=Forward  F9=Swap     F12=Cancel
F22=Command

_ 554A,182 3390A    1 5500 4A-FF PLX5    Y _____ Y
_ 5600,74  3390B    0 5600 00-49 PLX5    Y _____ Y
_ 564A,182 3390A    1 5600 4A-FF PLX5    Y _____ Y
***** Bottom of data *****
    
```



Tape Library Example



```

Proposed Control Unit / Device List
C [----- Discovered New or Changed Controller List -----] | ==> CSR
  Backup Query Help

Proposed Control Unit List

Row 1 of 8
Command ==> _____ Scroll ==> CSR

Control unit type . . : 3490-C2A      Serial number : B2902

Proposed switch.ports : 32.06 32.19 5B.44 5B.45

To accept the proposed values, press Enter. To modify them, edit the
fields, or select one or more control units to change, exclude or include
the corresponding definitions, then press Enter.

  CU  CU      # of  LPAR
 / ADD number+ devices Access+ New Description I
_ 00  5700    16    R87S55  Yes Tape Library 5700 Y
_ 01  5800    16    R87S55  Yes _____ Y
_ 02  5900    16    R87S55  Yes _____ Y
_ 03  5A00    16    R87S55  Yes _____ Y
_ 04  5B00    16    R87S55  Yes _____ Y
_ 05  5C00    16    R87S55  Yes _____ Y

F1=Help      F2=Split      F3=Exit      F4=Prompt      F5=Reset
F7=Backward  F8=Forward    F9=Swap      F12=Cancel     F22=Command
  
```



List of Proposed Tape Devices



Proposed Control Unit / Device List

Row 1 of 8

Command ==> _____ Scroll ==> CSR

Control unit type . . : 3490-C2A Serial number : B2902

To accept the proposed values, press Enter. To modify them, edit the fields, or select one or more device ranges to change, exclude or include the corresponding definitions, then press Enter.

-----Device-----	S	CU	UA	OS	N	Description	I
/ Number Type+	S	Num	Range	Access+			
█ 5700, 16 3490	0	5700	00-0F	PLX5	Y	_____	Y
_ 5800, 16 3490	0	5800	00-0F	PLX5	Y	_____	Y
_ 5900, 16 3490	0	5900	00-0F	PLX5	Y	_____	Y
_ 5A00, 16 3490	0	5A00	00-0F	PLX5	Y	_____	Y
_ 5B00, 16 3490	0	5B00	00-0F	PLX5	Y	_____	Y
_ 5C00, 16 3490	0	5C00	00-0F	PLX5	Y	_____	Y
_ 5D00, 16 3490	0	5D00	00-0F	PLX5	Y	_____	Y
_ 5E00, 16 3490	0	5E00	00-0F	PLX5	Y	_____	Y

***** Bottom of data *****

Proposed Tape Control Unit List



Goto Filter Backup Query Help

Control Unit List

Command ==> _____ Scroll ==> CSR

View Control Unit Definition

Row 1 of 1 More: >

Command ==> _____ Scroll ==> CSR

Control unit number . . : 5700 Tape Library 5700
 Control unit type . . . : 3490 Serial number . . . : B2902

Connected switch.ports: 32.06 32.19 5B.44 5B.45

ENTER to continue.

Proc.CSSID	1	2	3	4	5	6	7	8
R87.1	89.06	8C.7719						

***** Bottom of data *****

F1=Help F2=Split F3=Exit F7=Backward F8=Forward
 F9=Swap F12=Cancel F20=Right F22=Command

_	5A00	3490	3	1	B2902	
_	5B00	3490	4	1	B2902	



Displaying a Specific Tape Device



```
Goto Filter Backup Query Help
- View Device / OS Configuration Definitions
  View Device Parameter / Feature Definition
  Row 1 of 10
  Command ==> _____ Scroll ==> CSR
  Configuration ID . . : PLX5           OS Config for SVPLEX5
  Device number . . . : 5700          Device type . . . . : 3490
  Generic / VM device type . . . . . : 3490
  ENTER to continue.

  Parameter/
  Feature      Value      R Description
  OFFLINE     No         Device considered online or offline at IPL
  DYNAMIC     Yes        Device supports dynamic configuration
  LOCANY      No         UCB can reside in 31 bit storage
  LIBRARY     Yes        Device supports auto tape library
  AUTOSWITCH No         Device is automatically switchable
  LIBRARY-ID  60453      5 digit library serial number
  LIBPORT-ID  01        2 digit library string ID (port number)
  MTL         No         Device supports manual tape library
  SHARABLE    No         Device is Sharable between systems
  F1=Help     F2=Split   F3=Exit     F7=Backward F8=Forward
  F9=Swap     F12=Cancel F22=Command
```



Changing AutoConfig Policy Options

```

Discovered New or Changed Controller List
Policy Backup Query Help
-----
_ 1. Change policy options Row 37 of 59
Scroll ==> HALF

Select one or more controllers to be defined, then press
Enter.

/ Type Model Manufacturer Serial-# New Processed
- 2107 951 IBM 75 XD071 Yes No
- 2107 951 IBM 75 XG921 Yes No
- 2107 951 IBM 75 XM551 Yes No
- 2107 951 IBM 75 YN121 Yes No
- 2107 932 IBM 75 Y2431 Yes No
- 2107 932 IBM 75 Y4361 Yes No
- 2107 932 IBM 75 Y4371 Yes No
- 2107 932 IBM 75 Y4881 Yes No
- 2107 961 IBM 75 ZA591 Yes No
- 2107 921 IBM 75 02171 Yes No
- 2107 922 IBM 75 02271 Yes No
- 2107 922 IBM 75 02621 Yes No
  
```

Changing AutoConfig Policy Options



```
Autoconfiguration Policies
Row 1 of 16 More: >
Command ==> _____ Scroll ==> HALF
Edit or revise autoconfiguration policies.
HCD Profile : RIEDY.HCD.PROFILE

/ Policy keyword      P Value +
_ AUTO_CHPID_EXCLUDE  N P87.*,50-5F
_ AUTO_CHPID_EXCLUDE  N P87.0,40
_ AUTO_CHPID_EXCLUDE  N P87.1,41-4F
_ AUTO_CHPID_INCLUDE  N _____
# AUTO_MATCH_CU_DEVNUM Y YES
# AUTO_SS_ALTERNATE   Y 1
# AUTO_SS_DEVNUM_SCHEME Y PAIRING
# AUTO_SUG_CU_RANGE   Y 0001-FFFE
# AUTO_SUG_DEV_RANGE  Y 0001-FFFF
# AUTO_SUG_DYN_CHPIDS Y 2
# AUTO_SUG_LPGROUP    N P87R7D
# AUTO_SUG_OSGROUP    N PLX7
# AUTO_SUG_STAT_CHPIDS Y 6
_ AUTO_SWAD_EXCLUDE   N 15
```



AUTO_SS_DEVNUM_SCHEME=NONE



```
Proposed Control Unit List
CDBPDAC3                                     Row 1 of 6
Command ==> _                               Scroll ==> PAGE

Control unit type . . . : 2107-922          Serial number : CVBM1

Proposed switch.ports : 11.11 10.11

To accept the proposed values, press Enter. To modify them, edit the
fields, or select one or more control units to change, exclude or include
the corresponding definitions, then press Enter.

  CU  CU      # of  LPAR
 / ADD number+ devices Access+ New Description I
_ 00  0000    256   ALL   Yes _____ Y
_ 01  0000    256   ALL   Yes _____ Y
_ 02  0000     60   ALL   Yes _____ Y
_ 03  0000    130   ALL   Yes _____ Y
_ 04  0000    208   ALL   Yes _____ Y
_ 05  0000    256   ALL   Yes _____ Y

F1=Help      F2=Split      F3=Exit      F4=Prompt      F5=Reset
F7=Backward  F8=Forward      F9=Swap      F12=Cancel     F22=Command

Assign numbers for control units or devices. Then hit Enter. F12=Cancel
```

AUTO_SS_DEVNUM_SCHEME=NONE



```
Proposed Control Unit List
CBDPDAC3 Row 1 of 6
Command ==> _ Scroll ==> PAGE

Control unit type . . : 2107-922 Serial number : CVBM1

Proposed switch.ports : 11.11 10.11

To accept the proposed values, press Enter. To modify them, edit the
fields, or select one or more control units to change, exclude or include
the corresponding definitions, then press Enter.

  CU  CU      # of  LPAR
/ ADD number+ devices Access+ New Description I
_ 00 0B00   256  ALL   Yes _____ Y
_ 01 0C00   256  ALL   Yes _____ Y
_ 02 0500    60  ALL   Yes _____ Y
_ 03 0E00   130  ALL   Yes _____ Y
_ 04 2500   208  ALL   Yes _____ Y
_ 05 0000   256  ALL   Yes _____ N
F1=Help      F2=Split      F3=Exit      F4=Prompt      F5=Reset
F7=Backward  F8=Forward    F9=Swap      F12=Cancel     F22=Command

Items have been added. Review them, then press Enter. ap F12=Cancel
```


AUTO_SS_DEVNUM_SCHEME=NONE



```
CBDPDAC4          Proposed Control Unit / Device List          Row 1 of 5
Command ==> _      Scroll ==> PAGE

Control unit type . . : 2107-922          Serial number : CVBM1

To accept the proposed values, press Enter. To modify them, edit the
fields, or select one or more device ranges to change, exclude or include
the corresponding definitions, then press Enter.

-----Device----- S CU   UA   OS
/ Number  Type+      S Num Range Access+  N Description      I
_ 0000,256 3390B    0 0B00 00-FF MVSVM    Y _____      Y
_ 0000,256 3390B    0 0C00 00-FF MVSVM    Y _____      Y
_ 0000,60  3390B    0 0500 00-3B MVSVM    Y _____      Y
_ 0000,130 3390B    0 0E00 00-81 MVSVM    Y _____      Y
_ 0000,208 3390B    0 2500 00-CF MVSVM    Y _____      Y
***** Bottom of data *****

F1=H [Assign numbers for control units or devices. Then hit Enter.] ckward
```



AUTO_SS_DEVNUM_SCHEME=NONE



```
CBDPDAC4          Proposed Control Unit / Device List          Row 1 of 5
Command ==> _____ Scroll ==> PAGE

Control unit type . . : 2107-922          Serial number : CVBM1

To accept the proposed values, press Enter. To modify them, edit the
fields, or select one or more device ranges to change, exclude or include
the corresponding definitions, then press Enter.

-----Device----- S CU   UA   OS
/ Number  Type+    S Num Range Access+  N Description  I
_ 0B00,256 3390B    0 0B00 00-FF MVSVM    Y _____  Y
_ 0C00,256 3390B    0 0C00 00-FF MVSVM    Y _____  Y
_ 0500,60  3390B    0 0500 00-3B MVSVM    Y _____  Y
_ 0E00,130 3390B    0 0E00 00-81 MVSVM    Y _____  Y
_ 2500,208 3390B    0 2500 00-CF MVSVM    Y _____  Y
***** Bottom of data *****

Items have been added. Review them, then press Enter.

F1=Help                                     =Backward
```



Verifying a Configuration via zDAC

Activate or Process Configuration Data

Select one of the following tasks.

- 6_ 1. Build production I/O definition file
2. Build IOCDS
3. Build IOCP input data set
4. Create JES3 initialization stream data
5. View active configuration
6. Activate or verify configuration dynamically
7. Activate configuration sysplex-wide
8. *Activate switch configuration
9. *Save switch configuration
10. Build I/O configuration data
11. Build and manage System z cluster IOCDSs, IPL attributes and dynamic I/O changes
12. Build validated work I/O definition file

* = requires TSA I/O Operations

Verifying a Configuration via zDAC

Activate or Process Configuration Data

Activate or Verify Configuration

S

6

The currently active IODF matches the hardware I/O configuration. Both hardware and software definitions may be changed. Select one of the following tasks.

- 4 1. Activate new hardware and software configuration.
2. Activate software configuration only. Validate hardware changes. Process changes to functions and Coupling Facility elements.
3. Activate software configuration only.
4. *Verify active configuration against system.
5. *Verify target configuration against system.
6. Build CONFIGxx member.

* = requires TSA I/O Operations

*

TSA I/O Ops Not Available



```
Identify System I/O Configuration
Goto Filter Backup Query Help
Message List
Save Query Help
-----
Command ==> _____ Scroll ==> HALF Row 1 of 6
Messages are sorted by severity. Select one or more, then press Enter.
/ Sev Msg. ID Message Text
_ E   CBDG133I I/O Operations processing completed unsuccessfully.
#           Return code = 20 and reason code = 300D0004. IHVU029I
#           I/O-OPS IS NOT OPERATIONAL
_ I   CBDG375I I/O path is generated by means of IOS system discovery.
#           Sensed data is limited to FICON attached storage devices
#           on local system.
***** Bottom of data *****
```



I/O Path List Display

```

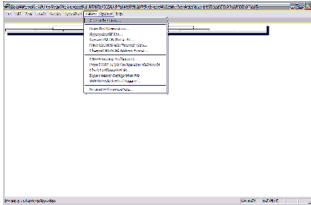
Identify System I/O Configuration
Goto Filter Backup Query Help
-----
I/O Path List      Row 46 of 1262 More:  >
Command ==> _____ Scroll ==> HALF

Accessed IODF: IODFST.IODF6A
Active IODF  : IODFST.IODF6A
Processor   . : P87           Partition : R7D
System     . : THIS-SYS
OS config: SVT7

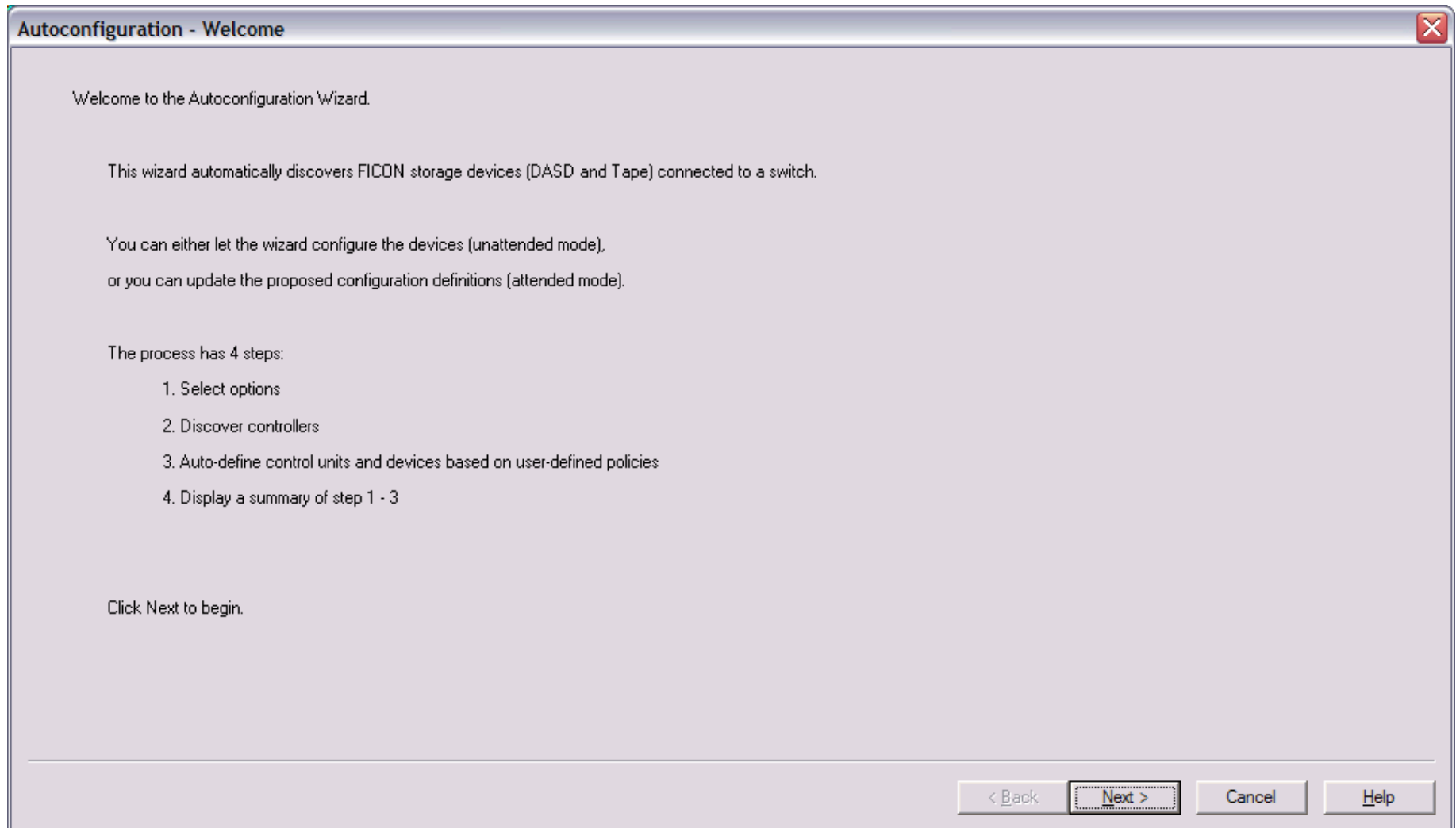
----I/O Path-----Sensed Data-----IODF Data----- D
CHP CU  DEV      STAT CHT  CUTYPE  DEVTYPE  0 CHT  CUTYPE  DEVTYPE  S
80  2000 2000,144 3  S FC_S  2107-941 3390B  FC  2107  3390B  *
80  2000 2090,48          FC  2107  3390A  1 *
80  2200 2200,160 3  S FC_S  2107-941 3390B  FC  2107  3390B  *
80  2200 22A0,48          FC  2107  3390A  1 *
80  2400 2400,128 UNKN FC_S  2107-941 3390B  FC  2107  3390B  @
80  2400 24C0,32          FC  2107  3390B  @
80  2400 24E0,16          FC  2107  3380B  @
80  2400 2480,64          FC  2107  3390A  1 @
80  2400 24F0,16          FC  2107  3380A  1 @
80  2600 2600,128 UNKN FC_S  2107-941 3390B  FC  2107  3390B  @
80  2600 2680,32          FC  2107  3390A  1 @

```

Discovering with HCM



Discovering with HCM...



Discovering with HCM...



Autoconfiguration - Summary

```
Summary of Controller L2531:
-----

The following options are defined:
-----

scope of discovery:      all controllers
full mode discovery:    no
autoconfiguration mode: show proposed definitions (attended mode)

The following policies are explicitly defined in 'BOKA.HCD.PROFILE':
-----

AUTO_MATCH_CU_DEVNUM   : YES
AUTO_SS_ALTERNATE      : 2
AUTO_SS_DEVNUM_SCHEME  : PAIRING
AUTO_SUG_CU_RANGE      : 2001-FFFF
AUTO_SUG_DEV_RANGE     : 2001-FFFF
AUTO_SUG_DYN_CHPIDS    : 4
AUTO_SUG_LPGROUP       : TRX2
AUTO_SUG_OSGROUP       : MVSVM
AUTO_SUG_STAT_CHPIDS   : 2
```

Save Summary ...

Accept Reject Help



Discovering with HCM...

Autoconfiguration - Discovered Controller List

Scope of discovery: All controllers
 Full mode discovery: No

Autoconfiguration operation mode

Show proposed definitions
 Automatically configure control units and devices

Select one or more controllers to be defined:

Include	Type	Model	Manufacturer	Plant	Serial Number	New ▾	Processed
	2107	922	IBM	75	10671	Yes	No
	2105	800	IBM	75	29410	Yes	No
	2105	800	IBM	75	29592	Yes	No
	1750	511	IBM	13	70340	Yes	No
	2107	9A2	IBM	75	74012	Yes	No
	2107	941	IBM	75	88621	Yes	No
	2107	922	IBM	75	92481	Yes	No
	1750	511	IBM	13	AFAPA	Yes	No
	3590	J70	IBM	78	C4433	Yes	No
	3590	C06	IBM	78	C5182	Yes	No
	2107	922	IBM	75	CVBM1	Yes	No
	2107	932	IBM	75	Cw931	Yes	No
✓	2107	931	IBM	75	L2531	Yes	No
	2107	931	IBM	75	58251	No	No
	2107	9A2	IBM	75	74011	No	No

Columns...
 Exclude...
 Include...

Number of objects listed: 20

< Back Next > Cancel Help

Discovering with HCM...



Autoconfiguration - Proposed Control Unit List

Controller Type: 2107 - 931
 Controller Serial Number: L2531

Connected Switch Ports: 14.8A 14.1A 14.9A 14.0A

Include	CUADD	CU Number	Type	Serial Number	# Devices	LPAR Access	New	Description
<input checked="" type="checkbox"/>	00	2500	2107	L2531	176	TRX2	Yes	
<input checked="" type="checkbox"/>	01	2600	2107	L2531	256	TRX2	Yes	
<input checked="" type="checkbox"/>	02	2E00	2107	L2531	256	TRX2	Yes	
<input checked="" type="checkbox"/>	04	3200	2107	L2531	28	TRX2	Yes	
<input checked="" type="checkbox"/>	08	3A00	2107	L2531	188	TRX2	Yes	
<input checked="" type="checkbox"/>	0A	3B00	2107	L2531	128	TRX2	Yes	
<input checked="" type="checkbox"/>	20	D800	2107	L2531	32	TRX2	No	LSS2107 D800 CU20 96B/...
<input checked="" type="checkbox"/>	21	D880	2107	L2531	32	TRX2	No	LSS2107 D800 CU21 96B/...
<input checked="" type="checkbox"/>	22	D900	2107	L2531	32	TRX2	No	LSS2107 D800 CU22 96B/...
<input checked="" type="checkbox"/>	23	D980	2107	L2531	32	TRX2	No	LSS2107 D800 CU23 96B/...

Columns...
 Edit...
 Exclude...
 Include...

Number of objects listed: 10

< Back **Next >** Cancel Help



Discovering with HCM...

Autoconfiguration - Proposed Device List

Controller Type: 2107 - 931
Controller Serial Number: L2531

Include ▲	Device Number	Type	SCHS	CU Number	UA Range	OS Access	New	Description
✓	2500,48	3390B	0	2500	00-2F	MVSVM	Yes	
✓	2540,128	3390A	2	2500	40-BF	MVSVM	Yes	
✓	2600,256	3390B	0	2600	00-FF	MVSVM	Yes	
✓	2E00,256	3390B	0	2E00	00-FF	MVSVM	Yes	
✓	3200,3	3390B	0	3200	00-02	MVSVM	Yes	
✓	3210,4	3390B	0	3200	10-13	MVSVM	Yes	
✓	3240,9	3390A	2	3200	40-48	MVSVM	Yes	
✓	3270,12	3390A	2	3200	70-7B	MVSVM	Yes	
✓	3A00,188	3390B	0	3A00	00-BB	MVSVM	Yes	
✓	3B00,128	3390B	0	3B00	00-7F	MVSVM	Yes	
✓	D800,32	3390B	0	D800	00-1F	MVSVM	No	
✓	D880,32	3390B	0	D880	00-1F	MVSVM	No	
✓	D900,32	3390B	0	D900	00-1F	MVSVM	No	
✓	D980,32	3390B	0	D980	00-1F	MVSVM	No	

Columns...
Edit...
Exclude...
Include...

Number of objects listed: 14

< Back **Next >** Cancel Help