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# **IBM z/OS HCD & HCM**

## **Newsletter No 7**



## **Single Point of Control in Sysplex**

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## [Understanding a Sysplex Configuration](#)

HCD offers you a single point of control for systems in a sysplex. Through HCD you can complete the following tasks for all systems in a sysplex:

- Define the hardware and software configurations
- Dynamically activate the hardware and software configuration changes in a sysplex

## [Planning for a Sysplex-Wide Activate](#)

MVS provides a platform of basic multisystem services in a sysplex that enhances the availability and improves managing the complexity of a multisystem environment. One of the services is the sysplex-wide activate. HCD Version 5 is used as a single point of control to initiate dynamic activate for one or more systems configured in the same sysplex, that means, configured in the sysplex couple data set.

Consider the following when you plan to activate your configuration changes sysplex wide:

- The sysplex-wide activate function of HCD initiates the execution of the ACTIVATE command on every MVS system selected. That means, every MVS system must be in a proper state related to dynamic I/O reconfiguration. At least software changes must be allowed by the system. To verify the current state, select from every HCD the options **Activate or process configuration data** and then **View active configuration**. HCD displays the currently active IODF, the HSA token and the activation scope.
- If your sysplex contains an MVS 4.3 system, it cannot be reconfigured dynamically using the sysplex-wide activate function. You have to use HCD running on that system or the ACTIVATE command on that system to initiate the dynamic activation.
- As for local dynamic activation requests, the high level qualifiers (HLQ) of the currently active IODFs on all systems have to be identical to the HLQ of the IODF that contains the configuration changes. It is recommended to use the same HLQ for all production IODFs in use and to share one common IODF wherever possible.

## [Activate Configuration Changes Sysplex-Wide](#)

The starting point for sysplex-wide activation requests is the Active Sysplex Member List, as shown in [Figure 1](#). Starting from the primary task selection panel where you have specified the production IODF to be activated, select **Activate or process configuration data**, and from the next panel select **Activate configuration sysplex-wide**.

You can see the system names, and the processor IDs and partition names associated with the system names. You can also see the IODF to be activated, the name of the sysplex, the active IODFs, the configuration IDs and EDT IDs used for IPL, and the Activate status, which is empty initially. For processors configured in LPAR mode the *Partition name* column contains values for those entries.

All this information is available in the sysplex couple data set together with the hardware configuration token stored in the HSA of every CPC. HCD requests the information from the sysplex couple data set and displays it in a formatted list as shown in [Figure 1](#).

HCD cannot associate a processor ID to a system. This means the entry in the Processor ID column is empty, if the MVS system runs as a VM guest.

This doesn't mean that you cannot initiate an activation request for that system. It means that you have to specify the correct processor ID later on by yourself, as required. Prompt support will be available.

The system name representing an MVS 4.3 system in the sysplex would be disabled for any action. That means any activation requests have to be initiated locally on that system.

The Active Sysplex Member list will be refreshed whenever you press Enter. If a system joins the sysplex, it will be added to the list in alphabetical order. If a system leaves the sysplex, it will be deleted from the list. Also if you have initiated an activation request for one or more systems, the Activate Status will change to *In progress* and finally to *Messages* once the activation request has entered this state and you have refreshed the list.

```
+-----+
| Goto Query Help |
+-----+
|CBDDPYF0          Active Sysplex Member List  Row 1 of 8 More:  >|
|
|Select one or more systems, then press Enter. To refresh the activate status,|
|press Enter without selections made. |
|
|IODF to be activated: 'SYS6.IODF05'|
|Active sysplex . . : WTSCPLX1 |
|
| System   Processor Partition Active   Config. EDT Activate |
|/ Name    ID         Name      IODF   ID      ID  Status |
|_ SC47    E01CPCB         SYS4.IODF55  L06RMVS1 01 |
|_ SC48    E01CPCB         SYS4.IODF09  MVS48    01 |
|_ SC49    E01CPCL  OS04     SYS6.IODF04  L06RMVS1 01 |
|_ SC50    E03CPC2  OS03     SYS6.IODF04  L06RMVS1 01 |
|_ SC52    E01CPCL  OS05     SYS6.IODF04  L06RMVS1 01 |
|_ SC53    E01CPCL  OS06     SYS6.IODF04  L06RMVS1 01 |
|_ SC54    E03CPC2  OS01     SYS6.IODF04  L06RMVS1 01 |
|_ SC55    E03CPC2  OS02     SYS6.IODF04  L06RMVS1 01 |
|
```

```

-----
|***** Bottom of data *****|
|
+-----

```

### Figure 1. Activate Sysplex Member List - Part 1

Press **F20** to move the work area to the right to see more information for processors configured in basic mode, such as the currently active hardware configuration token stored in the HSA, and whether the hardware configuration token stored in the HSA matches the processor token stored in the IODF. This information is not shown for processors running in LPAR mode because the information received from the sysplex data set might not reflect the actual state. See [Figure 2](#).

**Note:** Only processor ID and WWUV (world-wide-unique-value) are compared.

```

-----
| Goto Query Help |
|-----|
|CBDDPYF1          Active Sysplex Member List  Row 1 of 8 More: < >|
|
|Select one or more systems, then press Enter. To refresh the activate status,|
|press Enter without selections made. |
|
|IODF to be activated: 'SYS6.IODF05'|
|Active sysplex . . : WTSCPLX1 |
|
| System  -----HSA Configuration Token Information-- Token Match |
|/ Name   Proc.    Last Update      IODF Descriptors  HSA/Proc. |
|_ SC47 |
|_ SC48   E01CPCB  21:30:14  95-03-23  SYS6      IODF05   Yes |
|_ SC49 |
|_ SC50 |
|_ SC52 |
|_ SC53 |
|_ SC54 |
|_ SC55 |
|***** Bottom of data *****|
|
+-----

```

### Figure 2. Activate Sysplex Member List - Part 2

Move the work area again to the right to see the free space in the HSA for processors configured in basic mode. For processors configured in LPAR mode, select the system name and the **View the configuration status** action to receive the equivalent information.

```

-----
| Goto Query Help |
|-----|
|CBDDPYF2          Active Sysplex Member List  Row 1 of 8 More: |
|
|Select one or more systems, then press Enter. To refresh the activate status,|
|press Enter without selections made. |
|
|IODF to be activated: 'SYS6.IODF09'|
|Active sysplex . . : WTSCPLX1 |
|
| System  Processor ---HSA available for config. changes--- |
|/ Name   ID          Physical CUs  Subchannels  Logical CUs |
|_ SC47 |
|_ SC48   E01CPCB      19          175          18 |
|_ SC49   E01CPCL |
|_ SC50   E03CPC2 |
|_ SC52   E01CPCL |
|_ SC53   E01CPCL |
|_ SC54   E03CPC2 |
|_ SC55   E03CPC2 |
|***** Bottom of data *****|
|
+-----

```

### Figure 3. Activate Sysplex Member List - Part 3

Starting from the Active Sysplex Member list, you can initiate for one or more systems concurrently:

- **Activate a software configuration only**, for example to synchronize the hardware and software configurations or to indicate a device as dynamic or to move the UCB of a device above 16MB.
- **Activate a hardware and software configuration** if your configuration has changed.
- **Resume activation of the target configuration or Reset the source configuration**. If messages returned indicate an unsuccessful activation request and indicate also that a recovery action is required to reset the system in a proper state, select the affected system and the **View configuration status** action from the context menu (or action code **(v)**). This provides you with the information about which recovery action is adequate: either reset the original configuration or force to activate the changed configuration.
- **Switch the IOCDs for the next POR**, for example if you have activated a new configuration, have tested it and you want to use this configuration for subsequent PORs.
- **View or delete the messages** returned from an activate request. The messages remain available until you delete them explicitly or you initiate a new activation request for the corresponding system.
- **View the configuration status** provides you with the same information as it is displayed if you enter the command D IOS,CONFIG(ALL) at the system console.

Assume a string of DASD devices has been installed and made available for shared usage by all MVS systems running on processors E01CPCL and E03CPC2. Perform as follows:

1. Step 1: Activate software configuration only for systems SC52, SC53, SC54 and SC55 with hardware validation to insure that the subsequent hardware activation can be performed. These are all but one partition from both processors. After this step, hardware and software are no longer synchronized.
2. Step 2: Activate software and hardware configuration for systems SC49 and SC50. These are the remaining two partitions from both processors. After both steps have been performed, all systems will be updated with the configuration changes, and the tokens are synchronized again.

## Step 1

: Activate Software Configuration Only

Select systems SC52, SC53, SC54 and SC55 from the Active Sysplex Member list and the **Activate software configuration only** action from the context menu (or action code **(o)**). The Activate Software Configuration Only panel is displayed as shown in [Figure 4](#).

All systems you have selected are shown together with the associated processor IDs. Remember we also want to validate the hardware changes; therefore the processor IDs are required. If the *Processor ID* field is empty, prompt for the processor IDs and select the actual one. If the *Config. ID* and the *EDT ID* fields are empty, it is an indication that the ID of the currently active configuration is not defined in the IODF to be activated. Prompt for the new ID. Updating the *processor ID*, the *Config. ID* or the *EDT ID* fields might be required if your IODF to be activated contains IDs different than those displayed as default IDs.

**Note:** The IDs may be different in the currently active IODF and in the IODF to be activated, but make sure, the HLQ of the two IODFs is identical.

```

+-----+
|
| |-----Activate Software Configuration Only-----|
| | CBDDPYFA                                         Row 1 of 4 |
| |
| | Specify or revise the values for activation, then press Enter.
| |
| | IODF to be activated: 'SYS6.IODF05'
| |
| | System   Processor Partition Config.  EDT Valid. Test  Active
| | Name     ID +      Name      ID +   ID + HW Ch. Only IODF
| | SC52    E01CPCL  OS05      L06RMVS1 01  Yes  No  SYS6.IODF04
| | SC53    E01CPCL  OS06      L06RMVS1 01  Yes  No  SYS6.IODF04
| | SC54    E03CPC2  OS01      L06RMVS1 01  Yes  No  SYS6.IODF04
| | SC55    E03CPC2  OS02      L06RMVS1 01  Yes  No  SYS6.IODF04
| | ***** Bottom of data *****
| |
| |
+-----+

```

**Figure 4. Activate Software Configuration Only Panel**

After you have finished updating the panel, press Enter. The Active Sysplex Member list will be displayed again, but now the Active Status column shows the status *In progress*. If you refresh the list occasionally, you can see that one system after the other completes the activation request. This is indicated by the status *Messages*.

Select a system and the **View activate messages** action from the context menu (or action code **(m)**). The messages returned from that system as the result of the activation request will be displayed as shown in [Figure 5](#).

```

+-----+
|
| |-----+-----|
| | Save Query Help
| |
| |-----+-----|
| | CBDDPMSG2      Message List                      Row 1 of 4
| |
| |
| | Select one or more messages, then press Enter. To refresh the list, press
| | ENTER without selections made. To reply to a WTOR message, use the REPLY
| | command.
| |
| | System name: SC52
| |
| | / Message Text
| | _ IOS500I ACTIVATE RESULTS 084
| | # ACTIVATE COMPLETED SUCCESSFULLY
| | # NOTE = 0100,SOFTWARE-ONLY CHANGE
| | # COMPID=SC1C3
| | ***** Bottom of data *****
| |
| |
+-----+

```

**Figure 5. Message Panel with ACTIVATE Messages**

**Note:** HCD initiates the execution of the ACTIVATE command on the local or remote system. The messages returned are a response to that command. If you are not familiar with the keywords of the command, refer to *MVS/ESA SP V5 System Commands*. For example, if the message contains KEYWORD PROC INVALID, it means that the processor ID must not be specified.

## Step 2

## : Activate Software and Hardware Configuration

Select systems SC49 and SC50 from the Active Sysplex Member list and the *Activate software and hardware configuration* action from the context menu (or action code (a)). The Activate Hardware And Software Configuration panel is displayed as shown in [Figure 6](#).

Both systems you have selected are shown together with the associated processor IDs. Update the panel as required. If you plan to delete a device for a specific system, specify *Yes* in the *FORCE DEVICE* field of that system. If you plan to remove a partition from the access or candidate list of a channel path belonging to a specific system, specify *Yes* in the *FORCE CANDID.* field of that system.

```
+-----+
|
| |----- Activate Hardware and Software Configuration -----|
| | CBDPDYFB                               Row 1 of 2 More:   > |
| |
| | Specify or revise the values for activation, then press Enter. |
| |
| | IODF to be activated: 'SYS6.IODFF4'
| |
| | System  Processor Partition Config.  EDT  -FORCE Option- Switch  Test
| | Name    ID +      Name      ID +      ID + DEVICE CANDID. IOCDS + Only
| | SC49    E01CPCL  OS04      L06RMVS1 01  Yes   No      ___   No
| | SC50    E03CPC2  OS03      L06RMVS1 01  No    Yes     ___   No
| | ***** Bottom of data *****
| |
| |
+-----+
```

**Figure 6. Activate Hardware and Software Configuration Panel**

Verify the messages returned from the affected systems to insure that the activation requests have been successfully completed. After that you now delete all messages.

**Note:** Review the Active Sysplex Member List: At the minimum the *Active IODF* fields have changed for the affected systems and now contain the name of the IODF to be activated. If you have defined different processor IDs, configuration IDs or EDT IDs and you have activated their configurations, these fields also have been changed.

This function is available via PTFs. The PTF numbers are: PTFs UW90159, UW90160 for HCD 5.2 and PTFs UW90156, UW90157 for HCD 5.1, available in June 1995.

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### Your Feedback Is Important to Us

If you like the idea of the 'HCD Newsletters', or if you don't like it, or if you have suggestions for topics you want to hear about

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