

IBM z/OS HCD & HCM Newsletter No 25



**Migration from 2064
processor type/models to
2084 processor
type/models:
updated version**

From the Böblingen Development Team

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Upgrade to a 2084 processor using HCM

With z/OS version 1 release 4 and z/VM version 4 release 4, a new FMID (FMID HCM1510) is provided for HCM. If you have installed this FMID, then the HCM with which you are working can handle the IBM eServer™ zSeries 990 processors. Also, you must have FMID HCS7708 installed which is the HCD support which HCM needs in order to provide the new support. The major difference between the new processor type 2084 and its predecessors is that the 2084 processor definitions contain channel subsystems. Thus a new object has been introduced into the hierarchy:

processor <--> channel subsystem <--> partition <--> CHPID

This new hierarchy makes it impossible to just modify the processor type/model information within the HCM dialog (or HCD panel). We therefore want to show you how you can perform the migration to a 2084 processor type/model using HCM. However, before you start with the migration steps, we recommend that you first read chapter 15 "Importing and exporting data" of the [HCM User's Guide](#) (PDF, 3.98 MB). This chapter contains valuable information about the individual steps when exporting or importing data, and it also contains an explanation of what kind of information you can update when importing files.

Steps to migrate from a pre-2084 processor type/model to a 2084 processor type/model

Case 1 - Logical definitions only

If you use HCM for your configuration definitions without documenting your physical environment, then migrating from a non-2084 processor type/model to a 2084 processor type/model is a straightforward task. You have to perform the steps given below. Note that the order of the steps must not be changed.

If you have documented your physical environment with HCM, then skip this section and go to the [next one](#) that deals with migration scenarios where the physical configuration definitions are also considered.

1. Create a copy of your HCM configuration file, and also one of your IODF. This will enable you to go back to your original configuration files if you encounter any unexpected problems during the migration.
2. Create a new 2084 processor type using HCM, and define the required number of channel subsystems.
3. Leave HCM and start using HCD directly.
4. On the **Processor list** panel, perform the *Copy processor to channel subsystem* task on the non-2084 processor definition that you want to copy into a channel subsystem. Specify the target processor and select the channel subsystem as requested. The processor definition has now been copied into the channel subsystem. Note that coupling facility connections are not copied.
5. Delete the processor definition that you copied into the channel subsystem.
6. Establish the coupling facility connections between the CF CHPIDs on other processors and the CHPIDs in the channel subsystem into which you copied the processor definition, and also establish the CF connections within the 2084 processor (if needed). Note that you might need to set the CF CHPIDs in the channel subsystem to which you copied the processor configuration to 'not occupied' first.
7. Perform the PCHID migration for the CHPIDs on the new 2084 processor using HCD.
8. Exit HCD and return to HCM. Reload the HCM configuration file. HCM will now force a resynchronization step, after which, you need to re-establish the coupling facility connections. Also check whether your CTC connections from and to the channel subsystem are as expected. CTC connections between processors not involved in the migration scenario do not need to be checked.
 - o HCM will have detected all new switched CTC connections, but does not recognize point-to-point CTC connections. Establish these point-to-point CTC connections via HCM's **Create CTC Connections** dialog. You do not have to manually enter the CTC control units and CTC devices in the dialog, because HCM detects that the selected CHPIDs are already connected to CTC control units and CTC devices. Simply accept HCM's proposed CTC control units and CTC devices, and the point-to-point CTC connections will also be documented in HCM. Note that the CTC connections themselves were already logically defined in the IODF, but HCM has now also documented their physical configuration.
9. The migration process is now complete. You should now have successfully copied a processor definition into a channel subsystem definition.

Case 2 - Your configuration includes physical definitions

If you also use HCM to document your physical environment, then you have a few more steps to perform. Perform the following steps, and you should be able to successfully update your configuration definition as required. Note that the order of the steps must not be changed.

1. Create a copy of your HCM configuration file, and also one of your IODF. This will enable you to go back to your original configuration files if you encounter any unexpected problems during the migration.
2. **Generic Converters:** If there are any connections defined between CHPIDs of the processor definition (which you want to copy into a channel subsystem) and other objects where a converter is involved, then make sure that the converter is not a 'generic' converter that was automatically created by HCM. Double click on the converter object, and press the **Replace** button. On the following **Replace Converter** dialog, create a converter with label and serial number — you now have your own converter in the connection. If you keep generic converters, you will receive error messages during the later migration steps. If you do not want to create your own converters, but want to keep generic converters only, then you need to disconnect all connections to the processor that is being migrated where converters are involved in the link. Remember to reconnect them at the end of the whole procedure.
3. Save the HCM configuration file, and export the HCM files 'CONNECT.txt' and 'LOGLINK.txt' from it.

It might be that you receive some error messages during the export step. If you receive error message 'EEQ0261E: CCI is not unique, so it has not been exported', then check whether the mentioned interface is directly connected to a CHPID of the processor which you want to copy into a channel subsystem. If so, make sure that the controller interface is unique in your configuration. Most likely, you have created your own PDF file and labeled different interfaces with the same name. Make sure that your interfaces are labeled in a unique way in the PDF files.

In case you received message 'EEQ0261E: CCI ...' or 'EEQ0261E: CDI ...' and identified that one of your PDF files is set up in a way so that two or more interfaces have the same label, then copy and modify the PDF file accordingly so that unique labels are now used for all interfaces. For the modified PDF file, use a different file name (to preserve the original PDF file if needed), and provide a new subsystem identifier within the modified PDF file. After you modified the PDF file, you need to change the physical description for all controllers where you used the original PDF file, and you now need to apply the new PDF file. You can do so by clicking on the 'Select physical desc.' button in the 'Edit Controller' dialog where you then can select your modified PDF file.

Duplicate objects like duplicate interface names which you could create in HCM - and which do not produce any confusion to HCM during normal work - produce confusion to HCM as soon as data gets exported. The reason is that the exported data might get imported at a later time (as it should be done further down) into an HCM configuration file, but HCM then has no change to determine which interface or object is concerned when reading a specific line within the exported file. So again, always make sure that all your objects and all your interfaces are labeled in a unique way.

unique way.

4. Create a new 2084 processor using HCM, and define the required number of channel subsystems.
5. Exit HCM, and continue to work on the IODF using HCD.
6. On the **Processor list** panel, perform the *Copy processor to channel subsystem* task on the non-2084 processor definition that you want to copy into a channel subsystem. Specify the target processor and the channel subsystem as requested. The processor definition has now been copied into the selected channel subsystem. Note that coupling facility connections are not copied.
7. Delete the processor definition that you copied into the channel subsystem.
8. Establish the coupling facility connections between the CF CHPIDs on other processors and the CHPIDs in the channel subsystem into which you copied the processor definition, and also establish the CF connections within the 2084 processor (if needed). Note that you might need to set the CF CHPIDs in the channel subsystem to which you copied the processor configuration to 'not occupied' first.
9. Perform the PCHID migration for the CHPIDs on the new 2084 processor using HCD.
10. Exit HCD. Do not immediately restart HCM because you need to perform the following step first
11. Use a text editor on your PC to edit the two files that were exported in step 3. In 'LOGLINK.txt' and 'CONNECT.txt', globally replace every occurrence of the processor name that was copied with the new 2084-processor name followed by a dot (.) and the channel subsystem ID. For example: exchange 'PROC2064' with 'PROC2084.1' if you have copied a processor named PROC2064 into channel subsystem 1 of processor PROC2084.

However, before you globally replace the old processor name, it is a good idea to make sure that there are no other occurrences of the processor name in, for example, a string label or a patchport label. For instance, if the processor name of the processor to be migrated is 'ABC', and you have also labeled a string, controller, patchport, converter or cable with a name that 'ABC' is part of, then all those labels will of course be also changed via a global replace. As a result, you would get several error messages at import time as these modified labels no longer match the original labels that you did not intend to change. If you know that the processor name is part of any other label, then either you might want to change that label, or you need to change all occurrences of the processor name in both files 'LOGLINK.txt' and 'CONNECT.txt' manually in order to avoid subsequent error messages.

12. Use HCM again, and log on to the host again (this type of import step cannot be performed in HCM stand-alone mode). Do not load the HCM configuration file, but instead, execute the **Import data...** menu item of the **File** main menu of HCM. This allows you to import the modified files into your HCM configuration file that you want to update.
During the import step, HCM asks you whether you want to use the same IODF that is already associated with the HCM configuration file. Because this is the option that you want to choose (you have migrated the processor configuration into the channel subsystem within the IODF under focus), select that option. HCM now performs a background resynchronization step while importing the data because you have modified the IODF directly via HCD. During the import step, you may receive several HCM error messages:
 - o Error message **EEQ02511** may appear during the import step saying *"Record not processed. The configuration contains more than one PATCHPRT object which matches 'xxxxxx'."* If you receive this error message, then you have patchports in your configuration with patchport labels that have been manually entered. These labels are identical to those of other patchports that may have a default or manually-entered label. You can avoid such messages by specifying patchport labels that are unique across the whole configuration and are not default labels generated by HCM for other patchports.
 - o Error message **EEQ02511** may appear during the import step saying *"Record not processed. A CONVERTR object with the identifier 'S->P #n' does not exist."* If you receive this error message, then you have some generic converters in your configuration. To avoid these error messages, refer to step 2 above.
 - o Error message **EEQ02511** may appear during the import step saying *"Record not processed. A STRING object with the identifier 'String #n' does not exist."* String objects are never directly connected to CHPIDs, so you need not expect problems from this point of view. The record was not processed as reported, so the current physical environment was not changed.
 - o Error message **EEQ02511** may appear during the import step saying *"Record not processed. A CONTRLLR object with the identifier 'Controller for PROC2084.1' does not exist."* In the example above, we are migrating from processor PROC2064 to channel subsystem 1 of processor PROC2084. If the original label of the controller was 'Controller for PROC2064', and if you performed a global replacement of the processor name even though the processor name 'PROC2064' is part of at least one label of another object (here it is the label of a controller), then such error messages might occur. This type of error message might also occur for other objects, depending upon whether the processor name was part of the label or not. Besides this error message, it is likely that other error messages will also occur. The reason is that an object could not be found, and connections related to this object may also not be established as intended. Check step 9 above for more details.
 - o Warning message **EEQ02531** may appear during the import step saying that an object has been disconnected from a CHPID of the deleted processor definition. These are disconnect requests for HCM physical connections only; no IODF update is involved with this disconnect request. Note that the fiber link part below the now deleted CHPID remains for the new CHPID (the CHPID on the channel subsystem). For instance, if the now deleted CHPID was connected to patchport 1, which was further connected to patchport 2, and if patchport 2 was finally connected to a switch port, then both patchports will be part of the fiber link between the switch port and the new CHPID on the channel subsystem. Additionally, the cables involved in this link also remain in their original position.
 - o The current version of HCM does not write certain links into the exported file 'CONNECT.txt'. The missing connections relate only to daisy-chained controller connections where the first controller interface is further connected via a converter. When you perform the import step, HCM detects that a link is missing and complains about it. In this case, you will receive several EEQ0251E error messages saying that records have not been processed followed by one of these messages:
 - This connection requires another CONNECT record that references the bottom of converter "MyConverter".
 - This connection cannot be made because "3480 #1.A.out" is not connected.
 - This connection cannot be made because the connection in file C:\...\CONNECT.txt at line #000011 could not be made.
 - 'MyConverter' is not a valid LOGLINK Target.

The HCD/HCM development team is aware of this problem and is already developing a fix. The fix will be made available via a new service level. However, we cannot yet promise you a specific date when the service level containing the fix will become available. Check either the HCD/HCM home page, or whether this newsletter has been updated telling you that the latest HCM service level that fixes this problem is available.

A circumvention for this problem is to disconnect the connection between the first controller interface of the daisy-chained controller interfaces from the logical target (the logical target is not the converter because the converter is just inserted in the link for reasons of documenting the physical configuration). Because the critical link is no longer in the configuration, you could now go on as if you had disconnected all connections where converters were involved & see step 2 above.

13. After the import/resynchronization step, you need to re-establish the coupling facility connections. Also check whether your CTC connections from and to the channel subsystem are as expected. CTC connections between processors that are not involved in the migration scenario do not need to be checked.
 - o HCM will have detected all new switched CTC connections, but will not have recognized point-to-point CTC connections. Establish those point-to-point CTC connections via HCM's **Create CTC Connections** dialog. You do not have to manually enter the CTC control units and CTC devices in the dialog, because HCM detects that the selected CHPIDs are already connected to CTC control unit and CTC devices. Simply accept HCM's proposed CTC control units and CTC devices, and the point-to-point CTC connections will also be documented in HCM. Note that the CTC connections themselves were already logically defined in the IODF, but HCM has now also documented their physical configuration.

documented their physical configuration.

14. The migration process is now complete. You should now have successfully copied a processor definition into a channel subsystem definition.

Recommended HCM Service

At the time of writing, there are already some service levels available for the new HCM release with FMID HCM1510. In order to keep up-to-date with the latest available service level, we recommend that you check the HCD/HCM home page periodically for updates. Please consider installing the latest available PTFs

APAR	FMID	PTF number	Comment
IR51369	HCM1510	UR54050	This is service level 3 and contains HCM's support for the new subsystem creation wizard.
IR50947	HCM1510	UR54048	This is service level 2 and contains HCM's support for the eServer™ zSeries processor.

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