

IBM Z

*CHPID Mapping Tool User's Guide*

Level 02a



**Note:**

Before you use this information and the product it supports, read the information in “[Safety](#)” on page xv, Appendix B, “[Notices](#),” on page 115 , and IBM Systems Environmental Notices and User Guide, Z125-5823.

This edition, GC28-6984-02a, applies to IBM Z and IBM LinuxONE. This edition replaces GC28-6984-02.

There might be a newer version of this document in a **PDF** file available on **Resource Link**. Go to <http://www.ibm.com/servers/resourcelink> and click **Library** on the navigation bar.

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# Safety

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## Safety notices

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Safety notices may be printed throughout this guide. **DANGER** notices warn you of conditions or procedures that can result in death or severe personal injury. **CAUTION** notices warn you of conditions or procedures that can cause personal injury that is neither lethal nor extremely hazardous. **Attention** notices warn you of conditions or procedures that can cause damage to machines, equipment, or programs.

## World trade safety information

Several countries require the safety information contained in product publications to be presented in their translation. If this requirement applies to your country, a safety information booklet is included in the publications package shipped with the product. The booklet contains the translated safety information with references to the US English source. Before using a US English publication to install, operate, or service this product, you must first become familiar with the related safety information in the *Systems Safety Notices*, G229-9054. You should also refer to the booklet any time you do not clearly understand any safety information in the US English publications.

## Laser safety information

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All IBM Z® (Z) and IBM® LinuxONE (LinuxONE) models can use I/O cards such as FICON®, Open Systems Adapter (OSA), InterSystem Channel-3 (ISC-3), RoCE Express, Integrated Coupling Adapter (ICA SR), zHyperLink Express, or other I/O features which are fiber optic based and utilize lasers (short wavelength or long wavelength lasers).

## Laser compliance

All lasers are certified in the US to conform to the requirements of DHHS 21 CFR Subchapter J for Class 1 or Class 1M laser products. Outside the US, they are certified to be in compliance with IEC 60825 as a Class 1 or Class 1M laser product. Consult the label on each part for laser certification numbers and approval information.

**Laser Notice:** U.S. FDA CDRH NOTICE if low power lasers are utilized, integrated, or offered with end product systems as applicable. Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

**CAUTION: Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. (C027)**

**CAUTION: This product contains a Class 1M laser. Do not view directly with optical instruments. (C028)**





## About this publication

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This guide is intended to help users of the CHPID Mapping Tool to obtain the tool and learn to use it for mapping available CHPIDs to PCHIDs.

This guide is available in portable document format (PDF) to view or print from Resource Link® (at <http://www.ibm.com/servers/resourcelink>). This guide is also available in HTML format within the CHPID Mapping Tool itself under the **Help** menu. For more information about this, see [“The Help menu” on page 18](#).

## How to use this guide

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This guide includes the following:

- Chapter 1, “Overview,” on [page 1](#) describes the uses of the CHPID Mapping Tool and explains its requirements.
- Chapter 2, “Obtaining the CHPID Mapping Tool and CFReport file,” on [page 5](#) lists the steps for downloading from Resource Link:
  - The CHPID Mapping Tool (or an update)
  - The CFReport file.

**Note:** You need a valid Configuration Control Number (CCN) to download the CFReport file.
- Chapter 3, “Getting started,” on [page 7](#) explains how to start the CHPID Mapping Tool and import your CFReport file and IOCP file. It also provides a tour of the GUI controls of the tool.
- Chapter 4, “Performing hardware resolution,” on [page 29](#) explains why hardware resolution is needed, describes the Hardware Resolution view (both formats), and provides the steps for performing hardware resolution.
- Chapter 5, “Miscellaneous tasks,” on [page 43](#) describes how to perform tasks including saving and restoring session information, loading an IOCP file (if not loaded at project creation), importing and exporting sessions, and changing preferences.
- Chapter 8, “Manual mapping,” on [page 79](#) explains the Manual Mapping view and provides the steps for performing manual mapping method.
- Chapter 6, “Strategies and Guidelines for Assigning Priorities,” on [page 59](#) explains how to determine priorities for automatic mapping.
- Chapter 7, “Assigning priorities, automatic mapping, and processing intersections,” on [page 63](#) lists steps for assigning priorities, making automatic mapping available, and processing intersections
- Chapter 9, “Reports,” on [page 99](#) lists the steps to create and save reports.
- Chapter 10, “Troubleshooting and support,” on [page 109](#) provides troubleshooting information and the answers to frequently asked questions.

Figures included in this document illustrate concepts and are not necessarily accurate in content, appearance, or specific behavior.

## Revisions

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A technical change from the previous edition of this document is indicated by a vertical line (|) to the left of the change.

## Accessibility

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Accessible publications for this product are offered in EPUB format and can be downloaded from Resource Link at <http://www.ibm.com/servers/resourcelink>.

If you experience any difficulty with the accessibility of any IBM Z and IBM LinuxONE information, go to Resource Link at <http://www.ibm.com/servers/resourcelink> and click **Feedback** from the navigation bar on the left. In the **Comments** input area, state your question or comment, the publication title and number, choose **General comment** as the category and click **Submit**. You can also send an email to [reslink@us.ibm.com](mailto:reslink@us.ibm.com) providing the same information.

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### Accessibility features

The following list includes the major accessibility features in IBM Z and IBM LinuxONE documentation, and on the Hardware Management Console and Support Element console:

- Keyboard-only operation
- Interfaces that are commonly used by screen readers
- Customizable display attributes such as color, contrast, and font size
- Communication of information independent of color
- Interfaces commonly used by screen magnifiers
- Interfaces that are free of flashing lights that could induce seizures due to photo-sensitivity.

### Keyboard navigation

This product uses standard Microsoft Windows navigation keys.

### Consult assistive technologies

Assistive technology products such as screen readers function with our publications, the Hardware Management Console, and the Support Element console. Consult the product information for the specific assistive technology product that is used to access the EPUB format publication or console.

### IBM and accessibility

See <http://www.ibm.com/able> for more information about the commitment that IBM has to accessibility.

## How to send your comments

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Your feedback is important in helping to provide the most accurate and high-quality information. Send your comments by using Resource Link at <http://www.ibm.com/servers/resourcelink>. Select **Feedback** on the Navigation bar on the left. You can also send an email to [reslink@us.ibm.com](mailto:reslink@us.ibm.com). Be sure to include the name of the book, the form number of the book, the version of the book, if applicable, and the specific location of the text you are commenting on (for example, a page number, table number, or a heading).

# Chapter 1. Overview

This chapter describes the CHPID Mapping Tool and its requirements.

## Overview of the CHPID Mapping Tool

The CHPID Mapping Tool maps the I/O ports of your hardware to the CHPID definitions in your IOCP source statements. Such mapping helps to avoid connecting critical paths to single-points-of-failure. The CHPID mapping tool can save you time by minimizing or eliminating changes when you get new hardware or upgrade existing hardware.

The CHPID Mapping Tool supports the following:

- IBM z15™ (z15) / IBM LinuxONE III - Models T02 and LT2
- IBM z15 (z15) / IBM LinuxONE III - Models T01 and LT1
- IBM z14® (z14) / IBM LinuxONE Rockopper II (Rockopper II)
- IBM z14 (z14) / IBM LinuxONE Emperor II (Emperor II)
- IBM z13s® (z13s®) / IBM LinuxONE Rockhopper (Rockhopper)
- IBM z13® (z13®) / IBM LinuxONE Emperor (Emperor)
- IBM zEnterprise® BC12 (zBC12).
- IBM zEnterprise EC12 (zEC12).
- IBM zEnterprise 196 (z196) and IBM zEnterprise z114 (z114).
- IBM System z10® Enterprise Class (z10 EC) and IBM System z10 Business Class (z10 BC)
- IBM System z9® Enterprise Class (z9® EC) and IBM System z9 Business Class (z9 BC)

You can use the CHPID Mapping Tool for a new build, an upgrade to, or an MES for any supported processor. You can also use it to change an already installed machine after hardware upgrades increase the number of STI or InfiniBand links or channels.

No default CHPIDs are assigned to ports of z10 EC, z10 BC, z9 EC, or z9 BC processors. CHPIDs are assigned in the IOCP source file and mapped to the physical channel paths (PCHIDs). Using the CHPID mapping tool helps with these assignments. When the resulting IOCDS is loaded during activation of the CPC hardware, the CHPID to PCHID assignments become part of the configuration.

Using the CHPID Mapping Tool:

- You can maintain the existing IOCP definitions for CHPID assignments to control units. Using the tool minimizes any changes that you might need to make to in-house documentation, cable labels, and the hardware configuration definitions (HCDs).
- You can implement a numbering scheme for associating different device types to ranges of CHPID addresses. For example, you might want to have all DASD devices within a certain CHPID range.
- You do not need to change the existing control units and wiring.

For purposes of this document, consider a CHPID assignment as a logical value that is associated with a physical entity that is called a PCHID. A PCHID can be a specific port on an ESCON card, OSA-Express® card, FICON card, ICB, ISC link, and so on. A CHPID is merely an arbitrary number defined within the IOCP. The mapping tool relates that logical assignment to a PCHID location in the machine.

## Requirements

Before using the tool, there are certain requirements that must be satisfied.

- **Resource Link ID**

Before using the tool, the user must have a valid user ID and password for Resource Link. The web address for Resource Link is:

[www.ibm.com/servers/resourceLink](http://www.ibm.com/servers/resourceLink)

An option on the Resource Link Sign-in window allows you to obtain a user ID and password.

After you obtain a Resource Link ID, you can download the CHPID Mapping Tool (or upgrades to the tool).

- To use the CHPID Mapping Tool, you need a CFReport file. You can obtain the CFReport file in several ways:
  - Your IBM representative can provide you with the CFReport that is generated by e-config and can be used by the CHPID Mapping Tool.
  - You can download your CFReport file from the Resource Link website by identifying your order with the Configuration Control Number (CCN) for the new processor. When the machine to be mapped is configured and sent to the manufacturing database from the IBM (e-config), a CCN is associated with the configuration. You can obtain the CCN:
    - From the output listing of the configurator
    - From the PCHID Report created by the configurator. [Figure 1 on page 2](#) shows a sample PCHID Report for the z10 EC. In this example, the CCN is 34549311.

```

CHPIDSTART
34549311
Machine: 2097-E56 SN1
PCHID REPORT
Dec 11, 2007
-----
Source      Cage Slot  F/C   PCHID/Ports or AID  Comment
06/D5      A25B D506  0163  AID=0A
06/D6      A25B D606  0163  AID=0B
06/D7      A25B D706  0163  AID=0C
06/D8      A25B D806  0163  AID=0D
15/D5      A25B D515  0163  AID=1A
15/D6      A25B D615  0163  AID=1B
15/D7      A25B D715  0163  AID=1C
15/D8      A25B D815  0163  AID=1D
10/D5      A25B D510  0163  AID=12
10/D6      A25B D610  0163  AID=13
  
```

*Figure 1. Sample PCHID Report*

Ask your IBM representative to verify that you have the latest CCN associated with the machine order.

#### • **IOCP Source Input**

A validated IOCP source input must be provided. There are two ways to get a validated IOCP source input.

- Use the function in hardware configuration definition (HCD) to generate IOCP source from a validated work IODF. Validated work IODF is the stage of IODF where all logical definitions are in place except PCHID definitions. (Logical definitions are in place for channel subsystems, logical partitions, CHPIDs, control units, and devices.) At this stage HCD allows you to generate IOCP statements. You can transfer these statements to a PC as an ASCII text file. Then you can use them in the CHPID Mapping Tool. After PCHIDs have been mapped to the CHPIDs using the tool, the same IOCP source must be migrated back into HCD.

**Attention:** You cannot put the output of the CHPID Mapping Tool directly into IOCP. You must migrate it back into HCD.

If you generate IOCP statements from HCD, do not manually edit the file. Editing this file might prevent it from being imported back into the "validated work" IODF.

- Create an IOCP source manually and validate it using:
  - The ICP IOCP with an execution parameter of WRTCD=NO
  - The correct SYSTEM=value for the target machine.

For example, use SYSTEM=2094 for a z9 EC.

Some factors must be considered regarding this IOCP source file:

- This file must represent the configuration of the machine that is on order. For example, suppose the current machine has parallel channels and the new machine does not. The IOCP needs to be changed to remove the parallel channel definitions.
- The IOCP input must be generated by a level of HCD that supports the target machine. All of the channels to use on the target machine must be defined. The associated control unit statements must be included and CHPID types accurately defined. (For example, OSA-Express can have different CHPID types.)
- HCD or IOCP must validate the IOCP source input for the correct target machine. A manually generated source file might have errors associated with it that would be invalidated by IOCP. The mapping tool does not do any extensive validation of the source file. The file is presumed to be correct by IOCP standards.
- The tool does not consider:
  - Logical partitions (LPs). (That is, it does not consider which CHPIDs are assigned to which LPs.)
  - Switch configurations
  - Control unit availability characteristics.

Accordingly, the tool results might not be acceptable for all users. While helpful for many, it cannot replace an expert system programmer.

You map CHPIDs and export the updated IOCP file from the CHPID Mapping Tool. Then you import the file back into the same "validated work IODF" from which it was generated.

- The table that follows lists stand-alone application and system requirements:

<i>Table 1. Stand-alone application and system requirements</i>	
<b>Category</b>	<b>Requirement</b>
Operating system	Microsoft Windows (32-bit versions)
System memory	150 MB
Hard disk space	220 MB
Display resolution setting	At least 1024 by 768

## Overview of tasks for using the CHPID Mapping Tool

The graphical user interface (GUI) of the CHPID Mapping Tool is extensively redesigned. The following flow chart provides a graphical overview. It shows the tasks you need to perform from downloading the tool, through mapping, and optionally creating and saving reports.



---

## Chapter 2. Obtaining the CHPID Mapping Tool and CFReport file

This chapter explains how to download the CHPID Mapping Tool and the CFReport file. You need to have the correct Configuration Control Number (CCN) to download this file. For other requirements, see [“Requirements” on page 1](#).

---

### Download the CHPID Mapping Tool (or an upgraded version)

---

Perform the following steps to download the CHPID Mapping Tool (or an upgraded version).

**Note:** If you plan to use a saved session from an earlier version of the tool, export your IOCP file before upgrading to Version 6.0 or later. You need this IOCP file because the CHPID Mapping Tool does not restore saved sessions from earlier versions.

1. Log on to Resource Link.
2. Click **Tools** on the left navigation bar.
3. In the list of tools in the next (Tools) window, click **CHPID Mapping Tool**. Clicking this link displays the CHPID Mapping Tool window. From this window, you can perform the following actions:
  - Download the CHPID Mapping Tool
  - Download the CFReport file (if you have a valid CCN)
  - Access an education module
  - View the frequently asked questions (FAQ).
4. Click **CHPID Mapping Tool - Version 6.xx**. Resource Link displays the Download the CHPID Tool window. From this window you can:
  - Obtain the installer for the tool
5. Click the link to download the tool for the first time or upgrade your version.
6. The next window provides the information. If you want to use a saved session from an earlier version, export your IOCP file before upgrading to Version 6.0 or later. You need to do this because the CHPID Mapping Tool does not restore saved sessions from earlier versions. If you have satisfied this requirement, click **OK**.
7. A license window is displayed. Review the terms of the license, and click **I agree** to continue (or **I disagree** to end the process). Clicking **I agree** begins the process of downloading the CHPID Mapping Tool.

**Note:** You may subscribe to this page by clicking the "subscribe to this page" link at the top right hand corner of the Download the CHPID Mapping Tool window. Once you subscribe you will be notified when a new version of the tool is available for download.

---

### Obtaining the CFReport file

---

The CHPID Mapping Tool uses the CFReport file. Your service representative can provide you with a softcopy of this file, which e-config generates. Alternately, you can download a copy of your CFReport file on Resource Link.

**Before you begin:** To obtain the CFReport file, you need to know your CCN. The CCN is an 8-digit number that is the unique identifier for the ordered machine. It is critical that you verify with the service representative that you have the correct number.

Perform the following steps to obtain the CFReport file:

1. Log on to Resource Link if you are not already logged on to it.
2. Click **Tools** in the navigation bar on the left.
3. In the list of tools in the Tools window, click **CHPID Mapping Tool**. Resource Link displays the CHPID Mapping Tool window.
4. Click **CFReport (I/O Configuration Data)**. Resource Link displays the **CFReport Download** window. Figure 2 on page 6 displays this window.

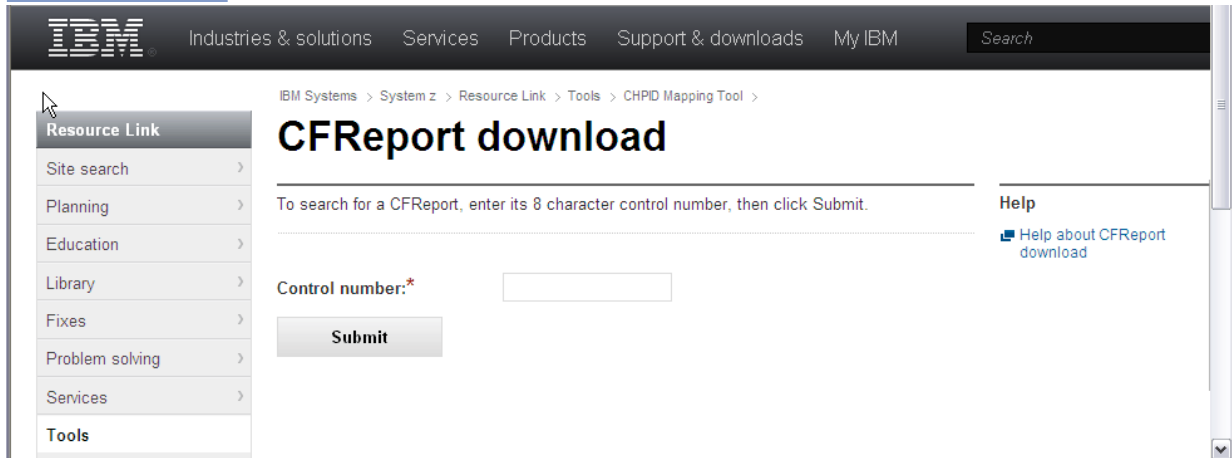


Figure 2. CFReport Download window

5. Enter the CCN in the **Control number** field, and click **Submit**.
6. If there are no problems, downloading begins.  
A File Download window is displayed, followed by a Save As window. These windows allow you to specify the location to save the file and on. You are recommended to always use .cfr as the extension for this file. You can use any name you want for the high-order name but are recommended not to change it. When the file is downloaded from Resource Link, the name is <CCN>.cfr.
7. If there are problems with the CCN, an error message is displayed on the CFReport Download window under the **Control number** field:

```
Control number: control_number not found
```

One reason the CCN could be incorrect is that the processing of the order from the IBM configurator might not have completed running. As part of the configuration process, the service representative running the configurator must send the order to the manufacturing database. You can click the **Help about CFReport download** link to display a window listing additional information.

If you cannot readily figure out the problem, contact your service representative as soon as possible, or click **Feedback** in the navigation bar on the left on Resource Link.



## Chapter 3. Getting started

This chapter provides:

- Information about starting the CHPID Mapping Tool. (See [“Starting the tool”](#) on page 7.)
- Directions for creating a project, including importing the CFReport file and IOCP input file. (See [“Creating a project”](#) on page 9.)
- Descriptions of the elements of the IBM Channel Path ID Availability and Mapping Tool window and how to manipulate them. These elements include:
  - Views (This chapter shows the Hardware Resolution view as an example because the tool displays this view after you create a project. The chapter references other views whose detailed descriptions are in other chapters.)
  - Panes
  - Columns of information
- Graphical user interface (GUI) elements:
  - Menus (see [“Menus”](#) on page 16)
  - Buttons (see [“Buttons”](#) on page 20)
  - Other controls (see [“Using other GUI controls to control the panes”](#) on page 23)

### Starting the tool

**Before you begin:** You must have already downloaded the CHPID Mapping Tool from Resource Link and obtained the CFReport file.

If you are updating the CHPID Mapping Tool, see [“Updating the tool”](#) on page 52.

After you download and install the CHPID Mapping Tool, its icon is available on your desktop. [Figure 3 on page 7](#) shows the icon.

Perform the following steps to start the tool:

1. Double-click the CHPID Mapping Tool icon to open the tool. [Figure 3 on page 7](#) shows this icon.

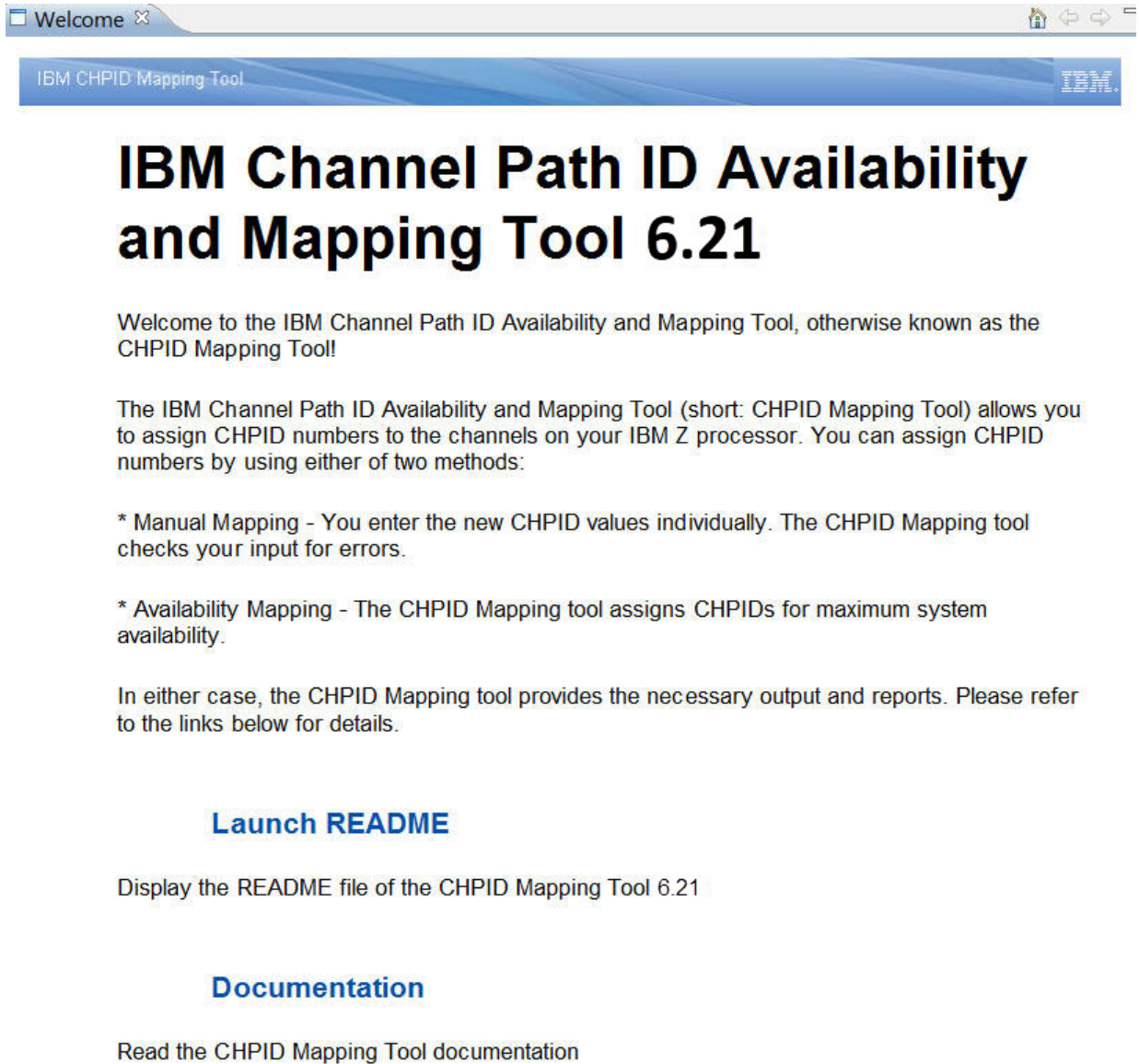


*Figure 3. CHPID Mapping Tool icon*

A splash screen window that identifies the tool is displayed and closes itself. The window displays:

- a. The full name of the CHPID Mapping Tool
- b. The current version of the CHPID Mapping Tool. The version of the tool is incremental when functionality is added.
- c. A licensing statement

The first time you open the CHPID Mapping Tool, the IBM CHPID Mapping Tool Welcome window opens. The tool displays this window after the blue wave window closes. [Figure 4 on page 8](#) shows an example of this window.



*Figure 4. IBM CHPID Mapping Tool Welcome window*

2. Click **Start Session**, a link in red near the bottom of the window. (Or you can click the X on the Welcome tab.)

The Welcome window closes, and the IBM CHPID Mapping Tool window opens. [Figure 5 on page 9](#) shows this window. (See page [“Welcome Window” on page 18](#) for a detailed description of the Welcome Window.)

**Note:** The tool opens the Welcome window in the following situations:

- The first time you open the tool
- If you used the tool before but did not save session information.

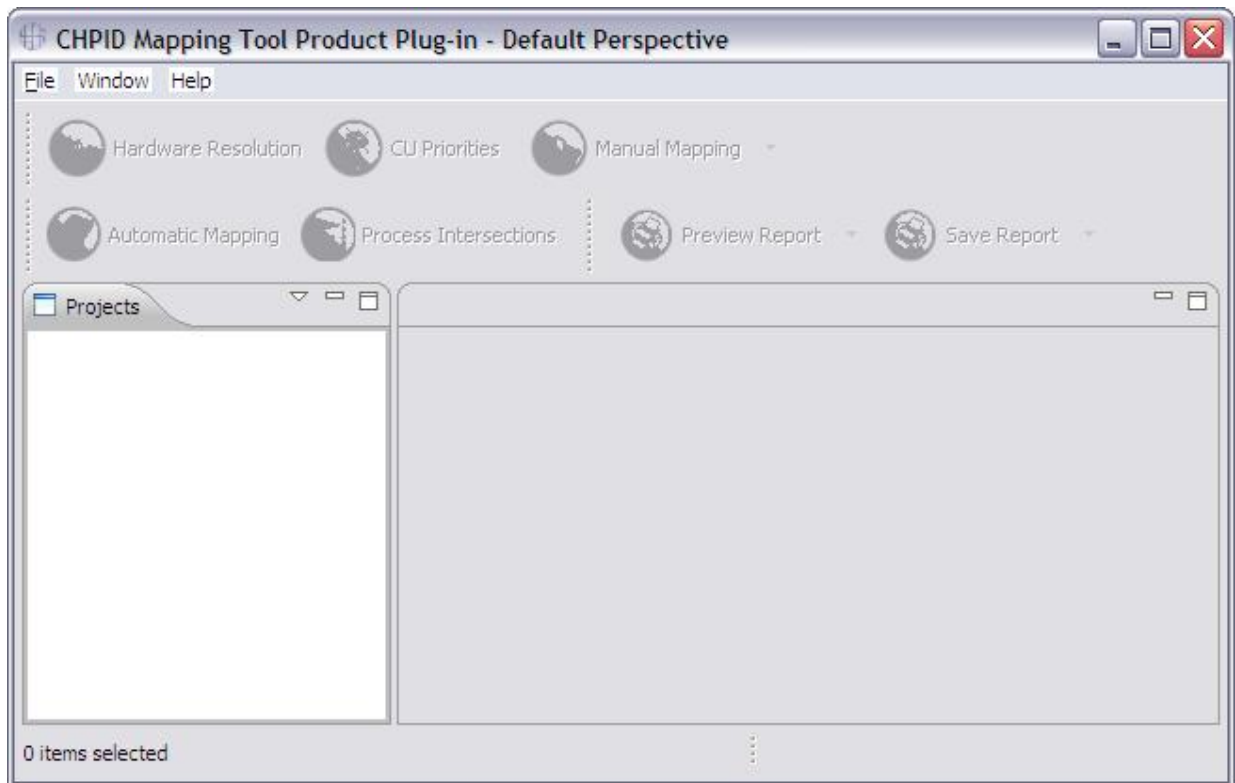


Figure 5. IBM CHPID Mapping Tool window with Projects pane

## Creating a project

The CHPID Mapping Tool allows you to specify the CFReport file and IOCP input file when creating a project. You cannot rename or replace these files within the tool after project creation. Do not work outside the tool to access these or any other files or directories the CHPID Mapping Tool uses; doing so might make the project files unusable.

Before you create a project, the IBM CHPID Mapping Tool window displays the following panes:

- The Projects pane on the left
- A blank pane on the left.

Figure 5 on page 9 shows the window containing these panes.

Perform the following steps to create a new project:

1. Right-click in the Projects pane (by default the leftmost pane), and click **New > Standard CMT Project**. Figure 6 on page 10 shows this sequence.

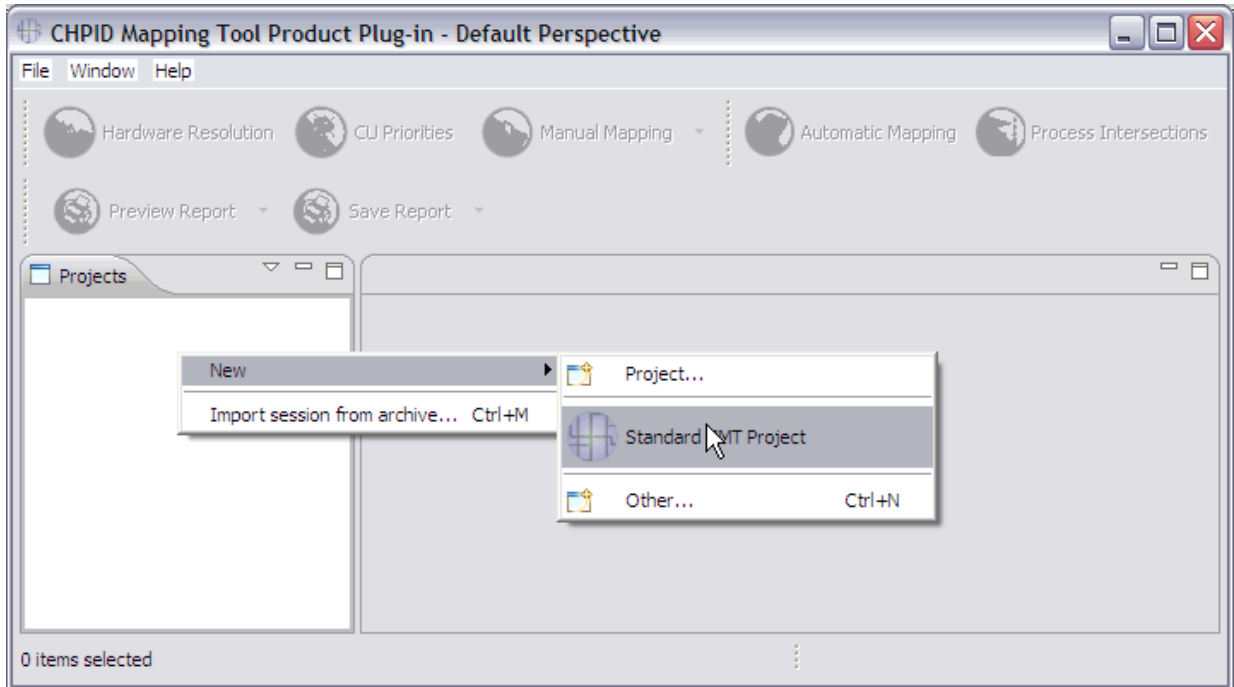


Figure 6. Creating a new project

The New CHPID Mapping Tool Project window opens. You use this window to specify a project name. Figure 7 on page 10 shows this window.

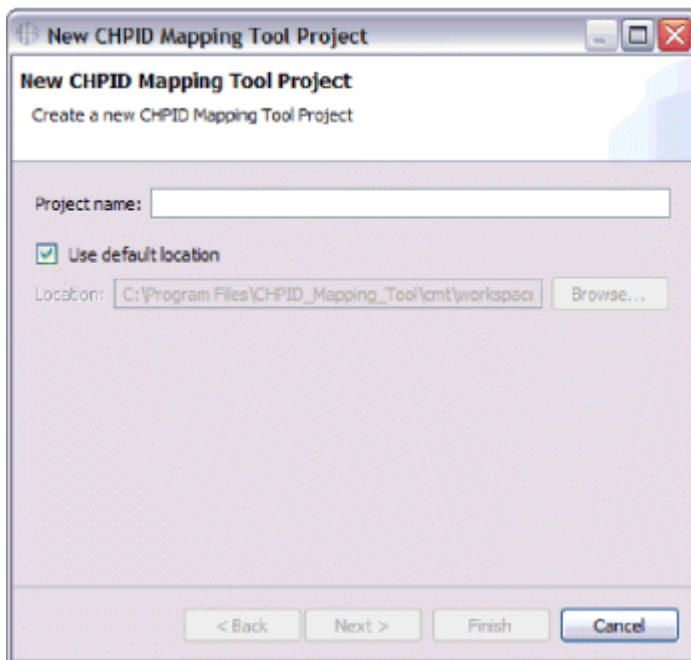


Figure 7. New CHPID Mapping Tool Project window

2. Type the name of your project in the **Project name** field.

**Note:** There is no facility within the CHPID Mapping Tool for renaming a project. Do not attempt to do so by directly accessing the project folder outside the tool. To do so might make the project files unusable.

(You can optionally change the default location where the project information is stored. To do so, clear **Use default location**, and browse to the location you want.)

After you type in the name, **Next** becomes available. Click **Next**.

The New CHPID Mapping Tool Project window displays fields where you specify the source CFReport and IOCP input files. Figure 8 on page 11 shows this.

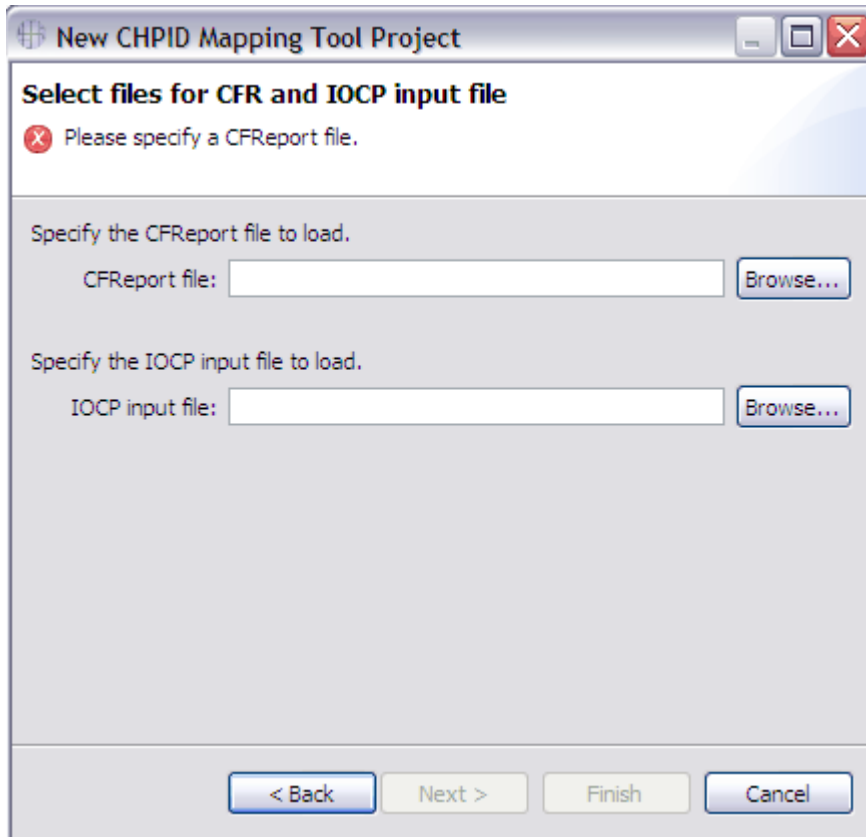


Figure 8. New CHPID Mapping Tool Project window

3. Specify the name of the CFReport file in the **CFReport File** field.

**Note:**

- a. Specifying a CFReport file is required.
- b. The tool copies the CFReport file you specify into a subfolder of the `Workspace/Project` folder. (The path is: `Workspace/Project/Input/CFR`.)
- c. You cannot change or rename the CFReport file after creating a project. If you create a project and need a different CFReport file, you need to create a new project.

One way to do this is to browse to the file. Perform the following steps:

- a. Click **Browse** beside the **CFReport file** field. The Open window opens.

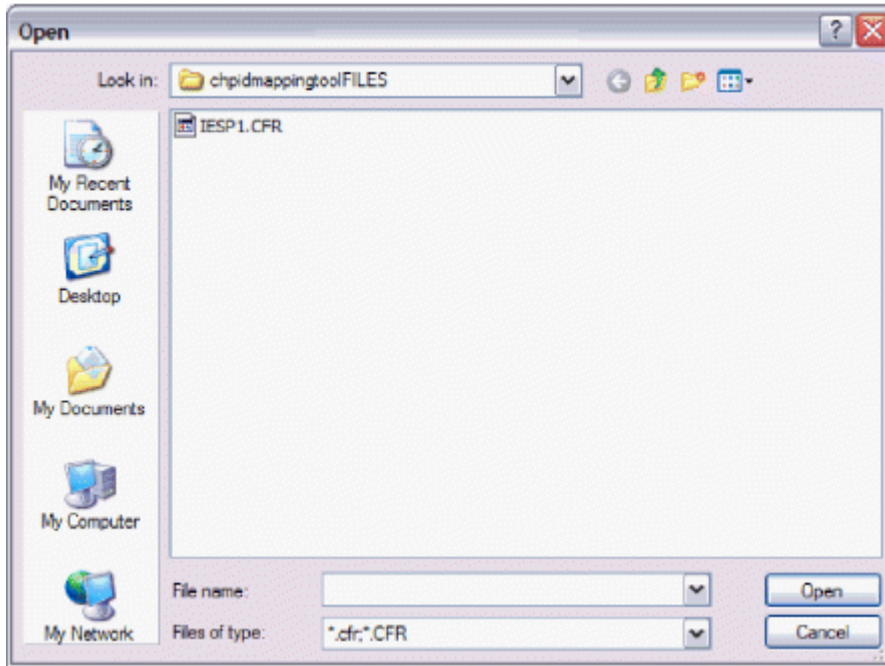


Figure 9. Open window (for CFReport file)

- b. Select a CFReport file. After you click the file to select it, the **File name** field at the bottom of the window is completed. Click **Open**. The tool returns you to the New CHPID Mapping Tool Project window. The name of the CFReport file is displayed in the **CFReport file** field.

Another way to specify the CFReport file is to type the path and file name in the **CFReport file** field.

4. If the Select Machine window opens, this means your CFReport file references multiple systems. You need to select the appropriate system. Figure 10 on page 12 shows the Select machine window.

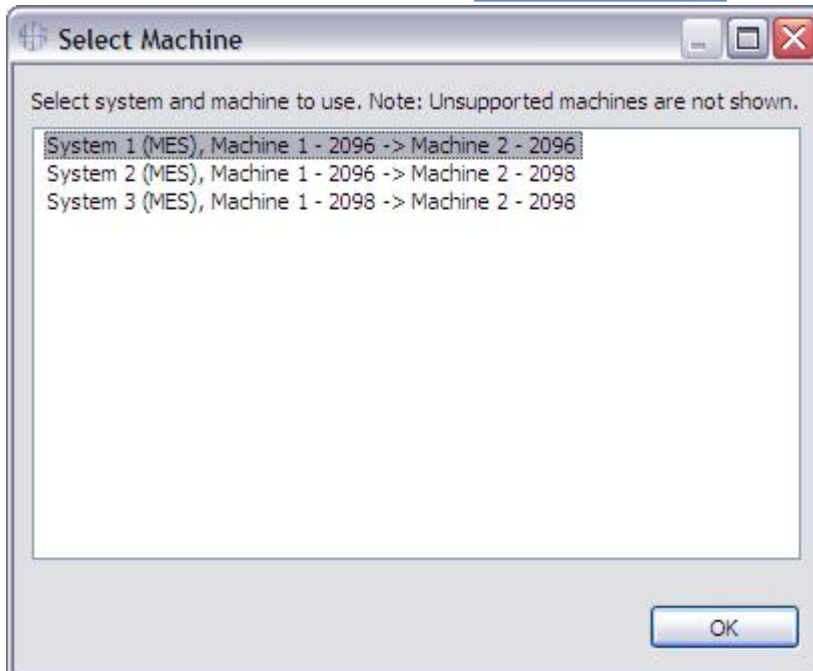


Figure 10. Select Machine window

Select a machine from the list and click **OK**.

5. Optionally, specify the IOCP input file.

**Note:**

- a. If you do not import the IOCP input file at this point, you can do this later. See [“Importing the IOCP file”](#) on page 45.
  - b. The tool copies the IOCP input file you specify into a subfolder of the `Workspace/Project` folder. (The path is: `Workspace/Project/Input/IOCP`.)
  - c. If you do not import an IOCP input file, you can still use the tool to create most reports but cannot perform any mapping. (You can create all reports except the Control Unit Report and the CHPID to Control Unit Report. See [Chapter 9, “Reports,”](#) on page 99 for details about reports.)
  - d. You cannot change or rename the IOCP input file after creating a project. If you create a project and need a different IOCP input file, you need to create a new project.
6. Click **Browse** beside the **IOCP input file** field. The Open window opens.

Click an IOCP input file to select it, and click **Open**. The tool returns you to the New CHPID Mapping Tool Project window. The name of the IOCP input file you selected is displayed in the **IOCP input file** field.

7. Click **Finish**.

**Note:** If you click **Finish** but have not selected an IOCP input file, you receive the following message:

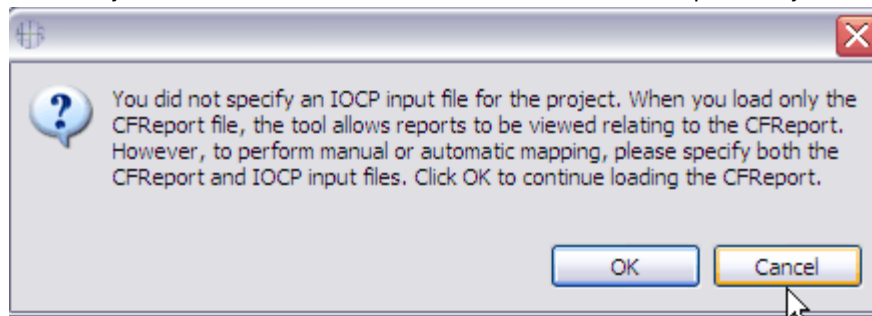


Figure 11. Message that you did not specify the IOCP file

You can click **OK** to continue without selecting an IOCP input file or click **Cancel** for another opportunity to select an IOCP input file (return to Step [“5”](#) on page 12).

After you click **Finish**, the tool displays a window depicting the progress of reading the CFReport file. Figure 12 on page 13 shows this window.

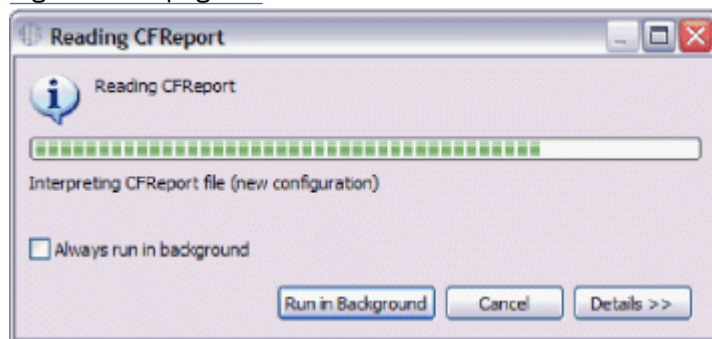


Figure 12. Reading CFReport window

The tool also displays the name of the project in the lower-left corner of the main window and the progress of the project creation in the lower-right corner. Figure 13 on page 13 shows these indicators.

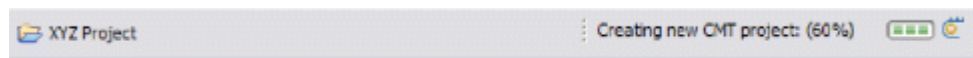


Figure 13. Project name and progress bar



8. If your CFReport file describes a miscellaneous equipment specification (MES), the Select IOCP Input File Source window opens. The purpose of this window is to specify whether the selected IOCP input file represents the old or the proposed configuration.

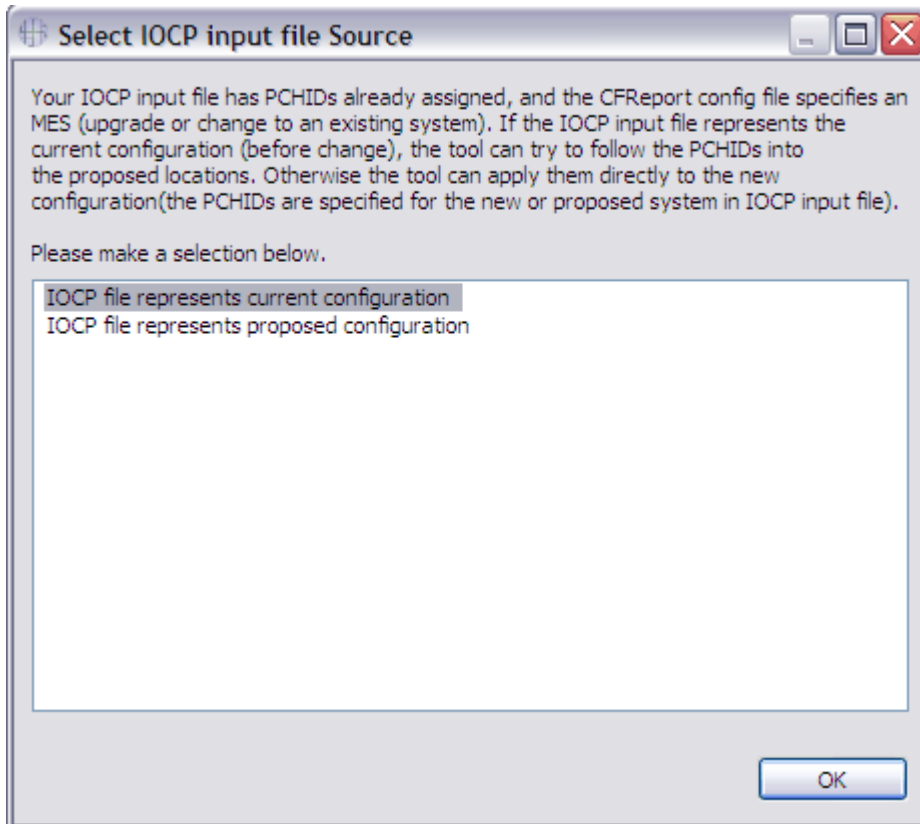


Figure 14. Select IOCP Input File Source

Choices are:

**IOCP input file represents current configuration**

Select this choice if the loaded IOCP input file represents the old system (you have not changed the IOCP input file before loading it into the CHPID Mapping Tool). This situation is the most common.

**IOCP input file represents proposed configuration**

Select this choice if the IOCP input file represents the new system (you manually changed the IOCP input file before loading it into the CHPID Mapping Tool).

9. If the CFReport file has AID values that cannot be determined, the tool assigns temporary values and displays the following window:



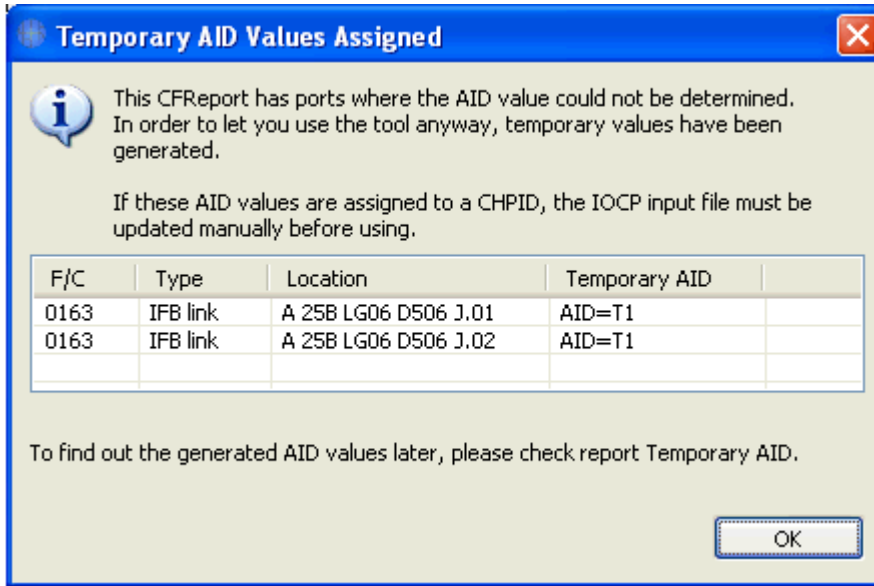


Figure 15. Temporary AID Values Assigned window

Figure 16 on page 15. shows the IBM CHPID Mapping Tool window after you have created a project.

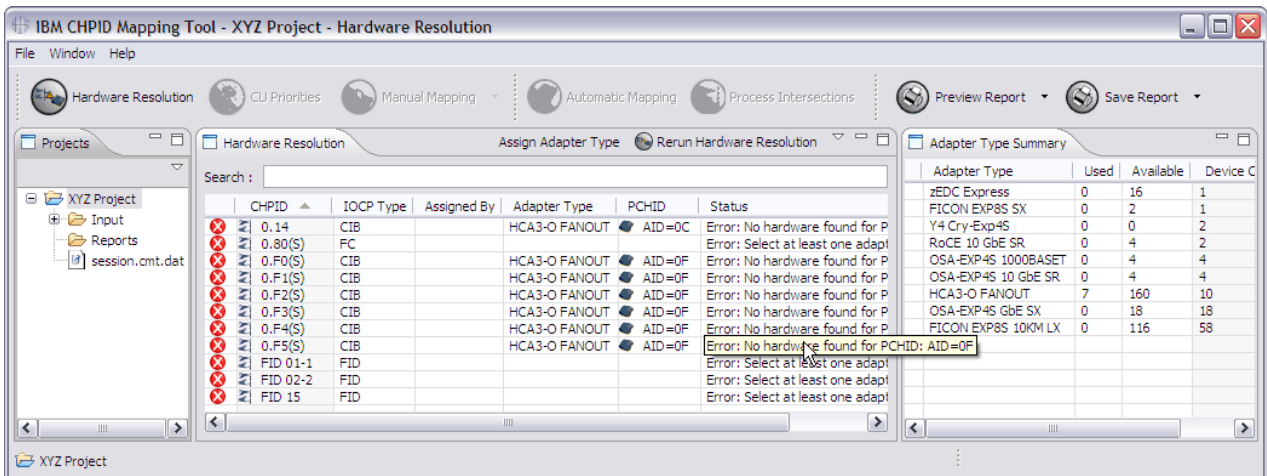


Figure 16. CHPID Mapping Tool window after project creation

The Hardware Resolution view is one of several different views the tool can display in the CHPID Mapping Tool window. In this view, the Hardware Resolution tabbed pane is the central pane. You can switch views by clicking (**Hardware Resolution**, **Preview Report** and so on) near the top of the window. For more information, see “Views” on page 22 and “Buttons” on page 20.

**Note:** The Hardware Configuration Manager (HCM) can use the CHPID Mapping Tool to create or update a project. (It can also use the tool to update an IOCP file.) When HCM opens the CHPID Mapping Tool, you specify whether to create a new project or use an existing project. If you are creating a new project, the tool prompts you for the CFReport file; see Figure 8 on page 11. The tool fills in the **IOCP file** field.

## The Projects pane

The Projects pane is present in all views. By default, it is the leftmost pane, and, if there is more than one pane is on the left, it is the top pane. You have already used the Projects pane to create a project (see “Creating a project” on page 9). Figure 17 on page 16 shows an example of the Projects pane.

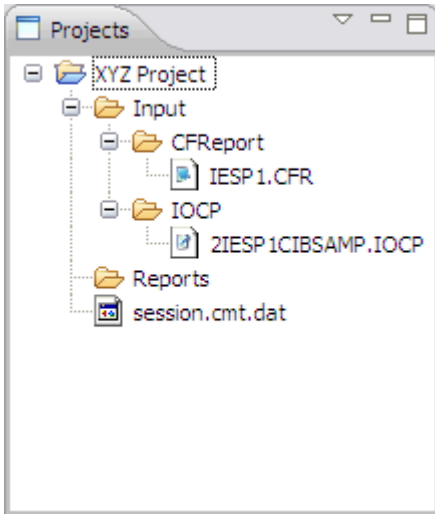


Figure 17. Projects pane

The Projects pane is present in the Hardware Resolution view and in other views. It allows you to create or delete a project. After you create a project, this pane displays information about projects in a tree-style format. You can click to expand the project and the items under it.

#### Input

This folder contains input folders. It expands to show two subfolders:

##### CFR

This folder contains the CFRreport file or files.

##### IOCP

This folder contains the IOCP input file or files.

#### Reports

This folder contains any generated reports.

**Note:** Most reports are available (after loading the CFRreport) even before loading the IOCP input file. Only the Control Unit Report and the CHPID to Control Unit Report require loading the IOCP input file. You can generate any report (for example, the CHPID Report) before assigning CHPIDs, but the CHPID field is empty in this case.

#### session.cmt.dat

This is a session file. It saves all the data you have worked on during the session and enables you to switch between projects. Double-click if you have multiple projects. This action loads the contents of the file into the mapping session.

You can perform various tasks relating to projects in the Projects pane. For details, see [“Tasks accessed in the Projects pane”](#) on page 43.

## Menus

---

Menu items at the top of the CHPID window include:

- File
- Window
- Help.

### The File menu

[Figure 18 on page 17](#) shows the selections under the File menu.

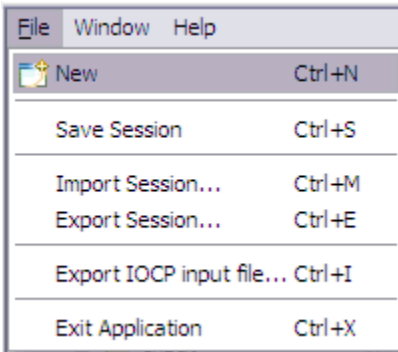


Figure 18. File menu

The File menu includes the following selections:

#### Save Session

This option saves information including:

- CFReport file
- IOCP input file
- Hardware resolution, CHPID assignment, or any other changes you have made during the session.

**Note:** The current version of the CHPID Mapping Tool (Version 6.xx) does not restore sessions saved from earlier versions. If you want to use a session from an earlier version, export your IOCP file before upgrading to Version 6.xx.

#### Import Session

Imports a saved session.

#### Export Session

This option opens a window to allow you to save any changes you have made and specify a new name.

#### Export IOCP Input File

This option allows you to save an updated IOCP input file. The statements in the IOCP input file include the assignments you have made with the CHPID Mapping Tool.

#### Exit Application

Closes the tool and exits the program.

If you have changed or updated CHPID assignments, the tool prompts you to save your session. However, you are recommended to click **Save Session** or **Export Session** before exiting any program. The change or update of CHPID assignments could be: change the IOCP type of CHPIDs, change of CHPID groups, or change the mapping between CHPID and PCHID.

## The Window menu

Figure 19 on page 17 shows the selections under the Window menu.

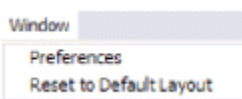


Figure 19. Window menu

The Window menu includes the following selections:

#### Preferences

Allows you to specify general preferences, manual mapping availability view preferences, report preferences, and hardware resolution message preferences. General preferences include the autosave interval and preferred temporary file location. Availability preferences allow selection of the default manual mapping view. Report preferences include formatting items; such as page size and

margins. Hardware resolution preferences include an option to disable adapter insufficient hardware pop-up messages.

### Reset to Default Layout

After you have closed or minimized one or more of the tabbed areas (in the Hardware Resolution view, these are: Projects, Hardware Resolution, and Channel Type Summary), this restores the Channel Path ID Availability and Mapping Tool window to its original format. (For the Hardware Resolution view, this is a three-pane format with Projects, Hardware Resolution, and Channel Type Summary. For other views, there may be more panes present.)

## The Help menu

Figure 20 on page 18 shows the selections under the Help menu.

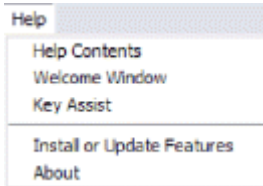


Figure 20. Help menu

The Help menu includes the following selections:

### Help Contents

This opens the Help window, which contains HTML documentation of the *CHPID Mapping Tool User's Guide*. The left pane contains a navigation tree. The right pane displays the documentation.

The left pane displays one of the following:

- Table of Contents (the default)
- Index
- Search Results
- Bookmarks

You can select what is displayed by clicking the buttons at the bottom of the pane.

The right pane displays the topic information.

### Welcome Window

This selection displays the Welcome window. The Welcome window provides links to the following:

- Information about what is new in this version of the tool
- Documentation
- Frequently Asked Questions (FAQs).
- Starting a session to use the tool.

### Key Assist

This selection displays a list of all the keyboard shortcut keys.

File>Exit	Ctrl+X
File>ExportSession	Ctrl+E
File>ImportSession	Ctrl+M
File>Save IOCP...	Ctrl+I
File>SaveSession	Ctrl+S
Help>KeyAssist	Ctrl+L
New	Ctrl+N
Next View	Ctrl+F7

Figure 21. Key assist

### Install or Update Features

This selection opens the Updates window. Figure 22 on page 19 shows this. Information regarding updates is discussed in Chapter 5, “Miscellaneous tasks,” on page 43

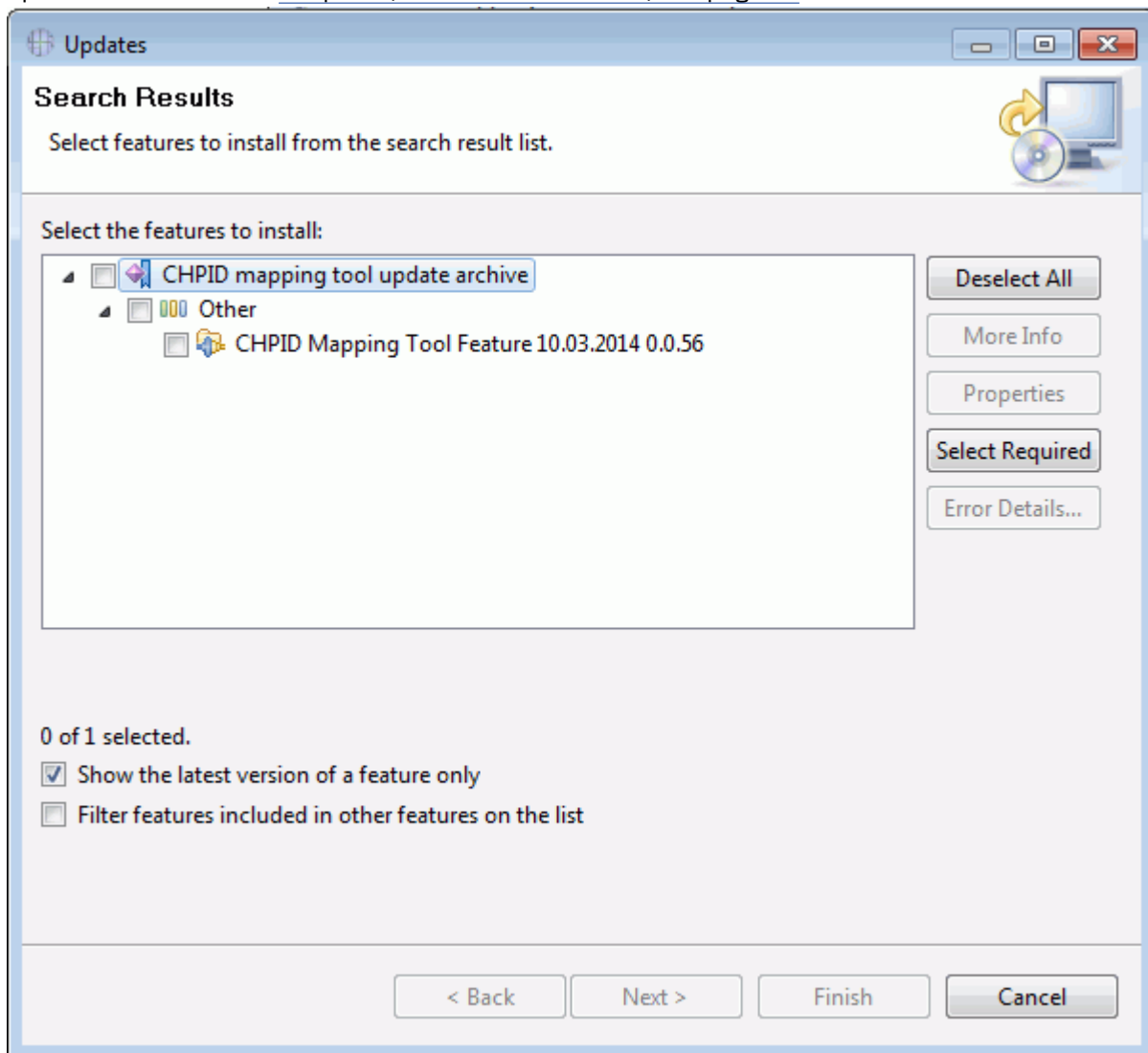


Figure 22. Updates window

### About

This selection opens the About IBM Channel Path Availability and Mapping Tool window.

This window specifies the copyright information for the CHPID Mapping Tool. It also provides the following buttons:

**Installation Details**

The tool opens a window with tabs:

**Features**

Displays the feature providers, versions, and feature IDs.

**Plug-ins**

Displays a table listing plug-in providers, versions, and IDs.

**Configuration**

Displays a text file containing configuration information. To save the text file, click **Click to Clipboard** and paste it into a text editor.

**OK**

The tool closes the About... window.

**Buttons**

After you create a project in the CHPID Mapping Tool, the tool displays the Hardware Resolution view. Figure 23 on page 20 shows this view.

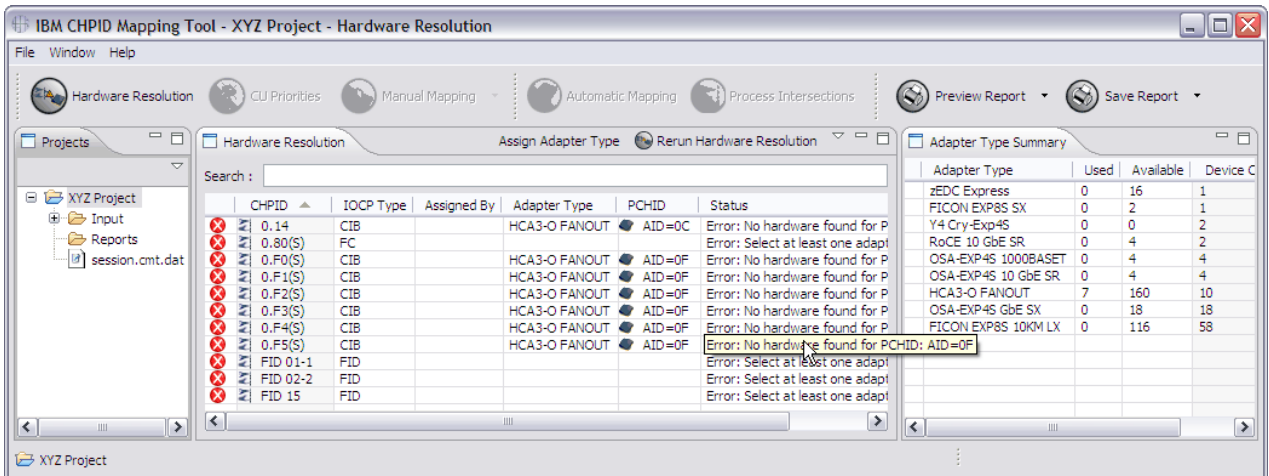


Figure 23. IBM CHPID Mapping Tool window – Hardware Resolution view

The Hardware Resolution view is one of several views. You can use some of the buttons near the top of the window to change the view; other buttons perform processing. Figure 24 on page 20 shows the buttons near the top of the IBM Channel Path ID Availability and Mapping Tool window.

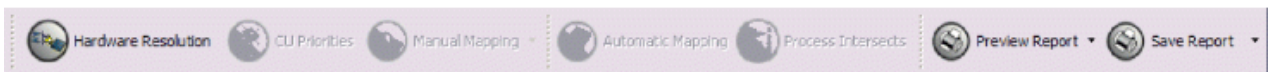


Figure 24. CHPID Mapping Tool - Top row of buttons

The buttons that are associated with changing the view are:

- **Hardware Resolution**
- **Manual Mapping**
- **CU Priorities**
- **Preview Report**
- **Save Report**

The following table lists the buttons and their actions and references the detailed descriptions of any associated views.

Table 2. Buttons and their actions

Button	Explanation
<b>Hardware Resolution</b>	<p>After you create a project, the CHPID Mapping Tool displays the Hardware Resolution version of the CHPID Mapping Tool window. For convenience, this book calls this the Hardware Resolution view. You can use this button to restore the Hardware Resolution view after you have switched to a different view.</p> <p>For an introduction to the Hardware Resolution view, see <a href="#">Chapter 4, “Performing hardware resolution,”</a> on page 29. For detailed information about the Hardware Resolution view, see <a href="#">“Performing hardware resolution”</a> on page 33.</p>
<b>CU Priorities</b>	<p>This button displays the Priority Editing (CU) version of the CHPID Mapping Tool window, which, for convenience, this book calls the CU Priorities.</p> <p>You need to assign priorities only in the following cases:</p> <ul style="list-style-type: none"> <li>• If you have two (or more) control units you want the tool to process at the same time</li> <li>• If you want to prioritize the most important control units.</li> </ul> <p>For more detailed information, see <a href="#">“The CU Priorities view”</a> on page 63.</p>
<b>Manual Mapping</b>	<p>By default this button displays the Connection Mapping (Hardware) version of the CHPID Mapping Tool window, which, for convenience, this book calls the Manual Mapping view. The Manual Mapping view has two formats:</p> <ul style="list-style-type: none"> <li>• The <b>Hardware &gt; I/O</b> format</li> <li>• The <b>I/O &gt; Hardware</b> format.</li> </ul> <p>Clicking the button displays the Hardware &gt; I/O format. Clicking the down-arrow beside the button allows you to choose your preferred format.</p> <p>For detailed information about the Manual Mapping view, see <a href="#">“The Manual Mapping view”</a> on page 79.</p>
<b>Automatic Mapping</b>	<p>This button performs processing for automatic mapping (and also for processing intersections), but it does not display a different view. For detailed information about Automatic Mapping, see <a href="#">“Performing Automatic Mapping”</a> on page 69</p>
<b>Process Intersections</b>	<p>This button performs processing, but it does not display a different view. It displays information about intersection in the CHPID Groups pane of the CU Priorities view or Manual Mapping view (either format). For more detailed information, see <a href="#">“Optionally using Process Intersections”</a> on page 77.</p>
<b>Preview Report</b>	<p>You need to click the down arrow beside either of these buttons to specify the type of report you want to preview or save. The tool performs processing, then displays the Reports version of the CHPID Mapping Tool window, which, for convenience, this book calls Report view. For detailed information, see <a href="#">“The Report view”</a> on page 102.</p>
<b>Save Report</b>	

## Views

After you create a project, the CHPID Mapping Tool displays the Hardware Resolution view. [Figure 25](#) on page 22 shows this view.

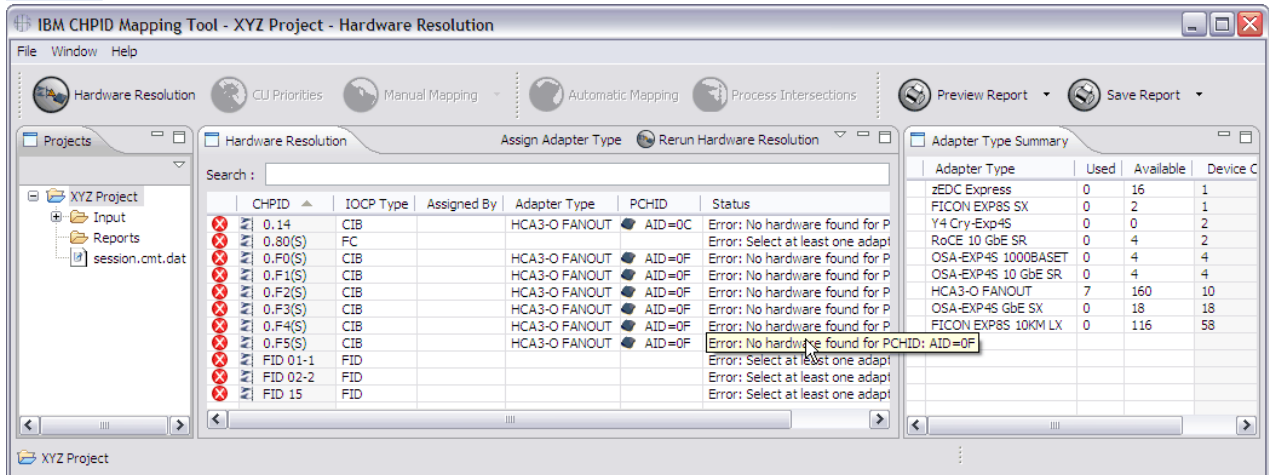


Figure 25. IBM CHPID Mapping Tool window – Hardware Resolution view

The CHPID Mapping Tool includes the following views:

- Hardware Resolution view – pictured in the preceding; see [Chapter 4, “Performing hardware resolution,”](#) on page 29 for more information.
- Manual Mapping view – see [Chapter 8, “Manual mapping,”](#) on page 79.
- CU Priorities view – see [“The CU Priorities view”](#) on page 63.
- Reports view – see [“The Report view”](#) on page 102.

You can switch views by clicking some of the buttons (**Preview Report**, and so forth) near the top of the window; see [“Buttons”](#) on page 20 for details.

The sections that follow describe the tabbed panes within the views and the columns within some panes. These sections tell you how to control what the tool displays.

## Tabbed Panes

Each view is composed of multiple tabbed panes. For example, as shown in [Figure 25](#) on page 22, the Hardware Resolution view contains three tabbed panes:

- Projects pane – by default on the left. The CHPID Mapping Tool displays the Projects pane in all views. For detailed information, see [“The Projects pane”](#) on page 15.
- Hardware Resolution pane – by default in the middle. For detailed information, see [“The Hardware Resolution pane”](#) on page 29 and [“Performing hardware resolution”](#) on page 33.
- Adapter Type Summary pane – by default on the right. See [“The Adapter Type Summary Pane”](#) on page 32 for detailed information.

The tool displays various panes in other views; this book describes these panes in the descriptions of those views. The following table summarizes which views share a particular pane:

Pane	Hardware Resolution view	Manual Mapping view (both formats)	CU Priorities view	Reports view
Projects	X	X	X	X



Table 3. Panes present in various views (continued)

Pane	Hardware Resolution view	Manual Mapping view (both formats)	CU Priorities view	Reports view
Hardware Resolution	X			
Adapter Type Summary	X			
Columns		X		
I/O Config		X		
Hardware		X		
CHPID Groups		X	X	
CU Priorities			X	
CU Details			X	
Report				X

## Resizing width of panes

To change the respective widths of the panes, perform the following steps:

1. Placing your cursor on the boundary between two tabbed panes until a double-headed arrow appear. Figure 26 on page 23 shows this.

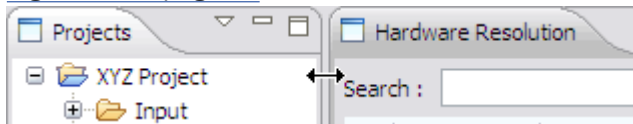


Figure 26. Double-headed arrow indicates you can resize width of s

2. Hold the left mouse button and slide the pane left or right until the respective widths are satisfactory. Then release the mouse button.

**Note:** When you are displaying views with upper and lower panes, you can use the same process to resize the height of the panes. An example of such a view is the Manual Mapping view.

## Moving panes by dragging the tabs

To rearrange the panes, click a tab and hold the left mouse button to drag the pane where you want it.

**Note:** To return the panes to their original view, click **Window > Reset to Default Layout** and **OK** in the Reset to Default Layout window that opens.

## Using other GUI controls to control the panes

You can use the small icons near the top of the Projects, Hardware Resolution, and Channel Type Summary tabbed panes to perform the following tasks:

- Open a menu of actions
- Minimize a pane
- Maximize a pane.

Every pane does not have every icon. [Figure 27 on page 24](#) shows *all* of the icons.



Figure 27. Additional GUI controls in the IBM CHPID Mapping Tool window

### View Menu

This arrow icon opens an actions menu.

For information about the View Menu on the Hardware Resolution pane, see the Note in [“Removing one or more PCHIDs - Action list method”](#) on page 36.

### Minimize icon

This icon looks like a minus sign. It minimizes the pane, removing the particular pane from view.

### Maximize icon

This icon looks similar to the Windows Explorer Maximizes icon. It maximizes the pane, removing the other pane or panes from view.

## Informational icons in tables

After you create a project, the tool shows the Hardware Resolution view. [Figure 28 on page 24](#) shows the Hardware Resolution pane in this view. The CHPID column contains an icon in front of each CHPID number. The bidirectional arrows icon is the I/O icon. It is a non-functional icon; clicking it does not perform any action. It is informational, indicating I/O.

CHPID	IOCP Type	Assigned By	Adapter Type	PCHID	Status
0.14	CIB		HCA3-O FANOUT	AID=0C	Error: No hardware found for PCHID: AID=0C
0.80(S)	FC				Error: Select at least one adapter type.
0.F0(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F1(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F2(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F3(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F4(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F5(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
FID 01-1	FID				Error: Select at least one adapter type.
FID 02-2	FID				Error: Select at least one adapter type.
FID 15	FID				Error: Select at least one adapter type.

Figure 28. Hardware Resolution pane with Xs in first column

Figure 28 on page 24 also shows that the PCHID column contains an icon front of each PCHID or AID number. The tilted square icon is the Hardware icon. It is a non-functional icon; clicking it does not perform any action. It is informational, indicating hardware.

## Restoring minimized panes

If you minimize a pane (or maximize a pane so that the other panes are automatically minimized), a set of two icons is displayed for each minimized pane. [Figure 29 on page 24](#) shows this.



Figure 29. The Restore icon and the tab-name icon

The top icon is the Restore icon. (It looks like two small diagonally positioned rectangles, and it resembles the Internet Explorer Restore Down icon.) It restores a pane you have minimized. To restore a pane you have previously minimized, click the Restore icon.

The bottom icon is the *tab-name* icon; for example, if you minimize Projects, it is the Projects icon. (This icon resembles the Internet Explorer Maximize icon.) The *tab-name* icon temporarily displays a minimized pane on top of a currently displayed pane. It provides a *quick view* of a minimized pane but the pane is displayed only until you click elsewhere in the tool or click **Esc**.

**Note:** The set of two icons is displayed for *each* pane you minimize. So if you minimize both Projects and Channel Type Summary tabbed panes, two sets of two icons are displayed. If you additionally minimize Hardware Resolution, three sets of two are displayed.

Perform one of the following steps to restore a pane that has been minimized.

- To restore a minimized pane (so that it persists), click the Restore icon (the top icon in [Figure 29 on page 24](#)).
- To temporarily display a previously minimized pane on top of another pane, click the *tab-name* icon (the bottom icon in [Figure 29 on page 24](#)).

## Restoring the default view after closing a pane

If you close a pane or panes in a view, such as the Hardware Resolution View, you can restore the original view by clicking **Window > Reset to Default Layout**.

**Note:** If you change to another view, such as the CU Priority view or the Manual Mapping view, you can restore the Hardware Resolution view by clicking the Hardware Resolution button.

## Search field

---

Only two views (Manual Mapping and CU Priorities) include the search field. See [Figure 116 on page 92](#).

## Columns

---

In panes with columns of information, such as the Hardware Resolution pane of the Hardware Resolution frame, you can:

- Sort the information in a column – see [“Sorting information” on page 25](#).
- Reorder the columns – see [“Reordering columns within a pane” on page 27](#).
- (In some views) specify the columns to display.

## Sorting information

For panes that contain information in tables, you can sort the columns. To sort the information in a column, click a column heading.

By default, one column heading in each table includes an arrow. By default, the tool sorts each pane by the column with the arrow. The arrow points up indicating the sort is in ascending order by default. For example, in the Hardware Resolution view, by default the Hardware Resolution pane contains an arrow in the CHPID column. This column is sorted in ascending order. [Figure 30 on page 26](#) shows this:

Hardware Resolution Assign Adapter Type Rerun Hardware Resolution

Search :

	CHPID ▲	IOCP Type	Assigned By	Adapter Type	PCHID	Status
✖	0.14	CIB		HCA3-O FANOUT	AID=0C	Error: No hardware found for PCHID: AID=0C
✖	0.80(S)	FC				Error: Select at least one adapter type.
✖	0.F0(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F1(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F2(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F3(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F4(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F5(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	FID 01-1	FID				Error: Select at least one adapter type.
✖	FID 02-2	FID				Error: Select at least one adapter type.
✖	FID 15	FID				Error: Select at least one adapter type.

Figure 30. Sorting by CHPID column - in ascending order

If you click the column heading (or the arrow in the column containing it), the tool displays an arrow pointing in the opposite direction and sorts the information in descending order. Figure 31 on page 26 shows this:

Hardware Resolution Assign Adapter Type Rerun Hardware Resolution

Search :

	CHPID ▼	IOCP Type	Assigned By	Adapter Type	PCHID	Status
✖	FID 15	FID				Error: Select at least one adapter type.
✖	FID 02-2	FID				Error: Select at least one adapter type.
✖	FID 01-1	FID				Error: Select at least one adapter type.
✖	0.F5(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F4(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F3(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F2(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F1(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F0(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.80(S)	FC				Error: Select at least one adapter type.
✖	0.14	CIB		HCA3-O FANOUT	AID=0C	Error: No hardware found for PCHID: AID=0C

Figure 31. Sorting by CHPID column - in descending order

You can toggle back and forth between ascending and descending order by clicking the column name or the arrow.

To change the column by which the tool sorts tabular information, click the column heading of a different column. Figure 32 on page 26 shows the Hardware Resolution pane after the user completed hardware resolution and then clicked the Channel Type heading. The tool displays an arrow in the Channel Type heading and sorts the column in ascending order.

Hardware Resolution Assign Adapter Type Rerun Hardware Resolution

Search :

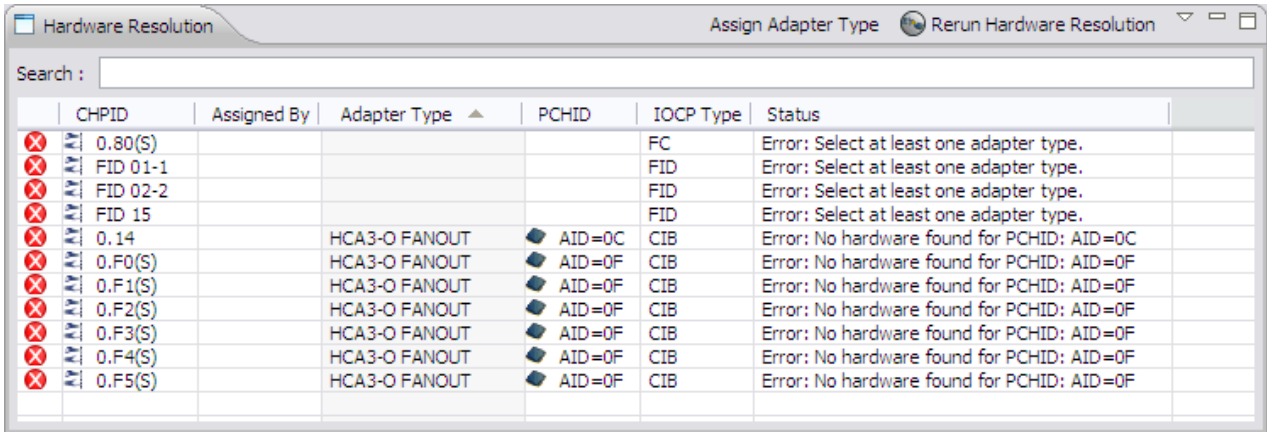
	CHPID	IOCP Type	Assigned By	Adapter Type ▲	PCHID	Status
✖	0.80(S)	FC				Error: Select at least one adapter type.
✖	FID 01-1	FID				Error: Select at least one adapter type.
✖	FID 02-2	FID				Error: Select at least one adapter type.
✖	FID 15	FID				Error: Select at least one adapter type.
✖	0.14	CIB		HCA3-O FANOUT	AID=0C	Error: No hardware found for PCHID: AID=0C
✖	0.F0(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F1(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F2(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F3(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F4(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✖	0.F5(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F

Figure 32. Sorting by a different column

Clicking the column heading again or clicking the arrow sorts the information in descending order.

## Reordering columns within a pane

You can reorder the columns within a pane: Click the column header while holding down the left mouse button and without releasing it drag and drop the column where you want it. The following example shows the IOCP Type column moved to the right of the Adapter Type column. [Figure 33 on page 27](#) shows this.



CHPID	Assigned By	Adapter Type	PCHID	IOCP Type	Status
0.80(S)				FC	Error: Select at least one adapter type.
FID 01-1				FID	Error: Select at least one adapter type.
FID 02-2				FID	Error: Select at least one adapter type.
FID 15				FID	Error: Select at least one adapter type.
0.14		HCA3-O FANOUT	AID=0C	CIB	Error: No hardware found for PCHID: AID=0C
0.F0(S)		HCA3-O FANOUT	AID=0F	CIB	Error: No hardware found for PCHID: AID=0F
0.F1(S)		HCA3-O FANOUT	AID=0F	CIB	Error: No hardware found for PCHID: AID=0F
0.F2(S)		HCA3-O FANOUT	AID=0F	CIB	Error: No hardware found for PCHID: AID=0F
0.F3(S)		HCA3-O FANOUT	AID=0F	CIB	Error: No hardware found for PCHID: AID=0F
0.F4(S)		HCA3-O FANOUT	AID=0F	CIB	Error: No hardware found for PCHID: AID=0F
0.F5(S)		HCA3-O FANOUT	AID=0F	CIB	Error: No hardware found for PCHID: AID=0F

Figure 33. Moving columns

See [“Using other GUI controls to control the panes” on page 23](#) and [“Moving panes by dragging the tabs” on page 23](#) for information about manipulating and moving panes.

## Controlling the display of columns

Although it is not present in the Hardware Resolution view, some other views include a Columns pane. [Figure 34 on page 27](#) shows this.

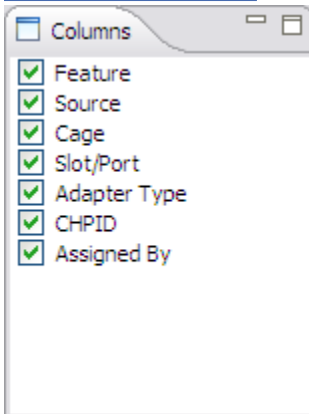


Figure 34. Columns pane showing available columns for Hardware pane

When you click within a pane in the view that contains columns of information, the Columns pane reflects the column headings. You can hide a column by clearing its check box and undo this by selecting it again.



## Chapter 4. Performing hardware resolution

This chapter:

- Explains the need for hardware resolution
- Describes the Hardware Resolution view (two formats)
- Lists the steps for performing hardware resolution.

### Why is hardware resolution needed?

Some CHPID types can be used for multiple card types. For example, a CHPID type OSD can be used on different card types -- Gigabit Ethernet or Fast Ethernet. If your project includes CHPID types that can be used for multiple card types, you need to choose the channel type in hardware resolution.

Hardware resolution might be needed for the following reasons:

- The PCHID channel type changed from your old system to your new system
- A defined PCHID is not compatible with the channel type at a particular location
- There are not enough ports (There is not sufficient hardware)
- There is a type mismatch between a CHPID and its associated channel type.

To resolve hardware resolution issues, you might need to obtain additional hardware or use a different IOCP file.

### The Hardware Resolution view

After you load your CFReport file and IOCP input file in the CHPID Mapping Tool, the IBM CHPID Mapping Tool window displays the Hardware Resolution view. (You can switch to other views by clicking the buttons (Preview Report and so on) near the top of the window; see “Buttons” on page 20 for more information.) The Hardware Resolution view includes three tabbed panes. [Figure 35 on page 29](#) shows this view.

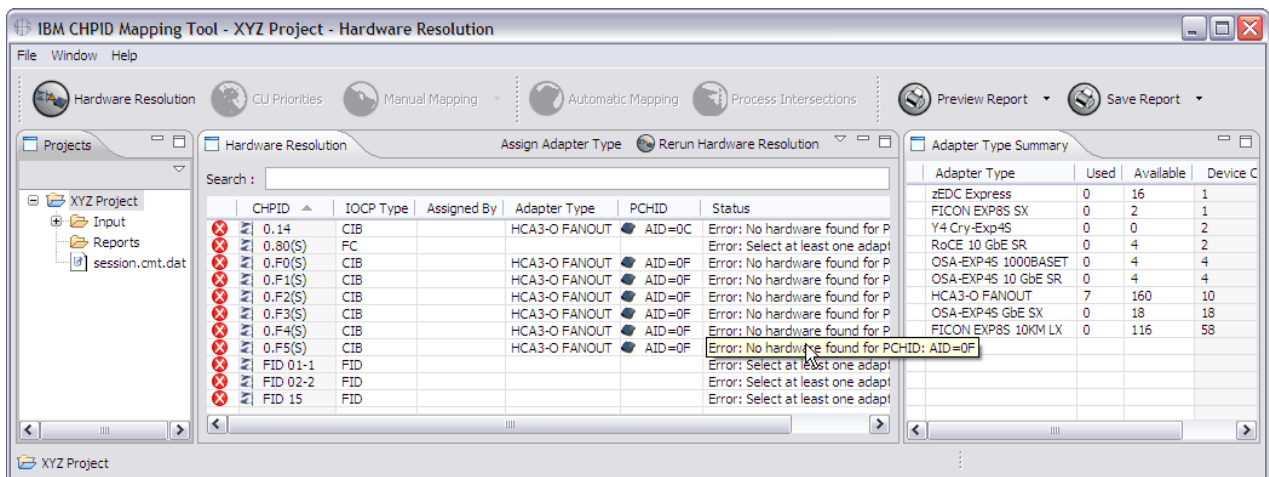


Figure 35. IBM CHPID Mapping Tool window - Hardware Resolution

### The Hardware Resolution pane

By default, the Hardware Resolution pane is the middle tabbed pane in the Hardware Resolution view. [Figure 36 on page 30](#) shows this window.



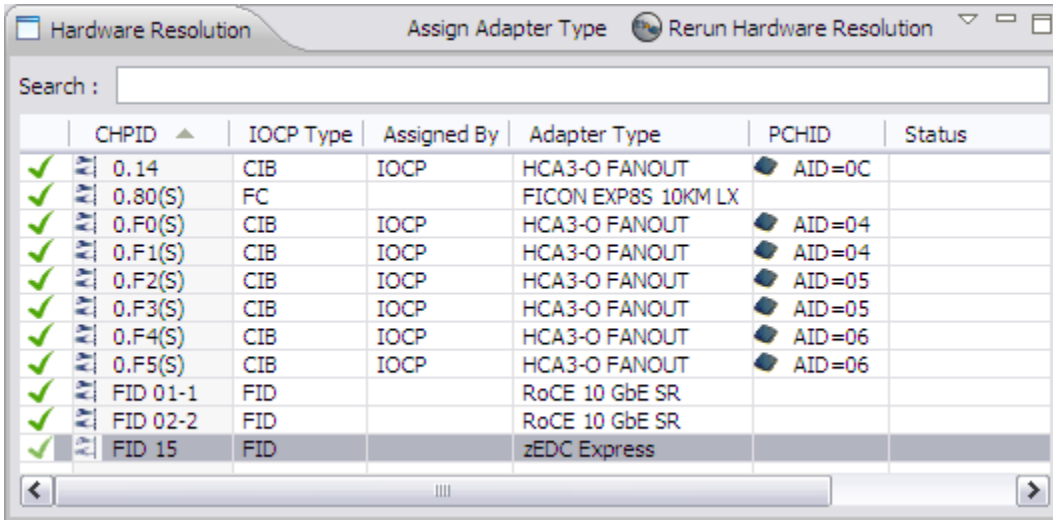


Figure 36. Hardware Resolution

**Note:** For information about sorting tabular information, see “Sorting information” on page 25.

The Hardware Resolution pane contains a table with the following columns:

**(Check mark, exclamation point, or X)**

This column contains either an X in a red circle, an exclamation point in a yellow circle, or a green check mark.

Figure 36 on page 30 shows the Hardware Resolution pane with green check marks in the first column of every row. A green check mark indicates the tool successfully resolved the specified Adapter Type. You can unassign the PCHID or change the adapter type, but you are not required to do so.

Figure 37 on page 30 shows the pane with Xs in red circles in the first column. .

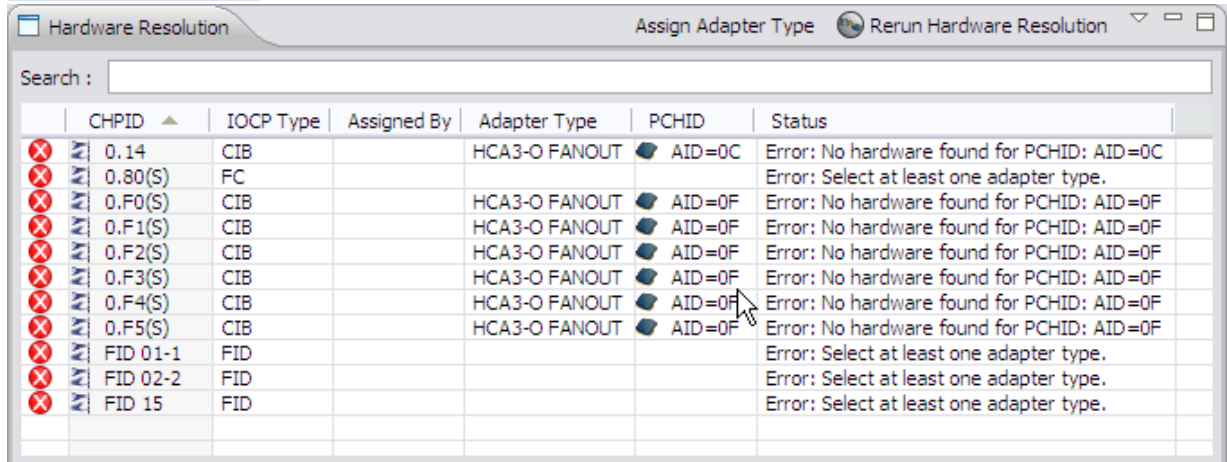


Figure 37. Hardware Resolution pane with Xs in first column

An X in a red circle indicates an error. The Status column provides information about the nature of this error. For example, if there are more CHPIDs, FIDs, or AIDs defined than available hardware, the Status column contains the message: Error: No hardware found.

An exclamation point in a yellow circle indicates a warning or informational information. The Status column provides information about the nature of the warning. For example, if there is only one channel type available, the Status column contains the message: Attention: Only available channel type FICON EXP8 10KM automatically selected.

Figure 38 on page 31 shows the Hardware Resolution pane with green check marks in the first column of every row. A green check mark indicates the tool successfully resolved the specified Channel Type.



	CHPID	IOCP Type	Assigned By	Adapter Type	PCHID	Status
✓	0.14	CIB	IOCP	HCA3-O FANOUT	AID=0D	
✓	0.80(S)	FC		FICON EXP8S 10KM LX		
✓	0.F0(S)	CIB	IOCP	HCA3-O FANOUT	AID=04	
✓	0.F1(S)	CIB	IOCP	HCA3-O FANOUT	AID=04	
✓	0.F2(S)	CIB	IOCP	HCA3-O FANOUT	AID=05	
✓	0.F3(S)	CIB	IOCP	HCA3-O FANOUT	AID=05	
✓	0.F4(S)	CIB	IOCP	HCA3-O FANOUT	AID=06	
✓	0.F5(S)	CIB	IOCP	HCA3-O FANOUT	AID=06	
✓	FID 01-1	FID		RoCE 10 GbE SR		
✓	FID 02-2	FID		RoCE 10 GbE SR		
✓	FID 15	FID		zEDC Express		

Figure 38. Hardware Resolution pane - With green check marks in every row

The left- and right-facing arrow icons simply indicate input and output; they are not functional.

### CHPID

This column specifies the CHPID number.

**Note:** The I/O icon (bidirectional arrows) in front of each CHPID number does not perform any action; it is for information purposes only.

### IOCP Type

This column specifies the CHPID type.

### Assigned By

This column specifies the source of the CHPID assignment. Values can include the following sources:

- Manual
- Automatic
- IOCP
- Config file
- Ignore
- Delete

For detailed information, see the Assigned By row in [Table 6 on page 83](#).

**Note:** For a spanned CHPID, the value can be Multiple, and expanding the row displays individual values as in the preceding list.

### Adapter Type

This column specifies the type of card containing the port.

### PCHID

This column represents the CHPID that is mapped to a PCHID. It is blank if unmapped.

**Note:** The Hardware icon (tilted square) in front of each PCHID number in [Figure 37 on page 30](#) does not perform any action; it is for information purposes only.

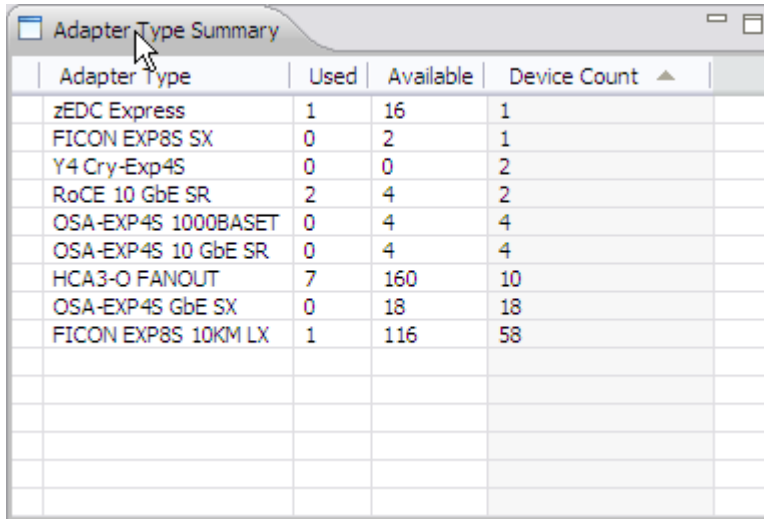
### Status

If there is an X in a red circle in first column indicating a hardware error, the Status column provides information about the nature of the error, such as: No hardware found. If there is a green check mark in the first column, the Status column may be blank or it may contain information, for example for an MES. (See [Table 4 on page 34](#) for a list of status messages and suggestions about how to resolve errors.)

You do the work to perform hardware resolution in the Hardware Resolution pane. However, the rightmost tabbed pane, Adapter Type Summary, contains helpful information. It summarizes the number of used and available channels for the hardware adapter types.

### The Adapter Type Summary Pane

By default, the Adapter Type Summary pane is the rightmost tabbed pane in the Hardware Resolution view. [Figure 39 on page 32](#) shows this pane.



Adapter Type	Used	Available	Device Count
zEDC Express	1	16	1
FICON EXP8S SX	0	2	1
Y4 Cry-Exp4S	0	0	2
RoCE 10 GbE SR	2	4	2
OSA-EXP4S 1000BASET	0	4	4
OSA-EXP4S 10 GbE SR	0	4	4
HCA3-O FANOUT	7	160	10
OSA-EXP4S GbE SX	0	18	18
FICON EXP8S 10KM LX	1	116	58

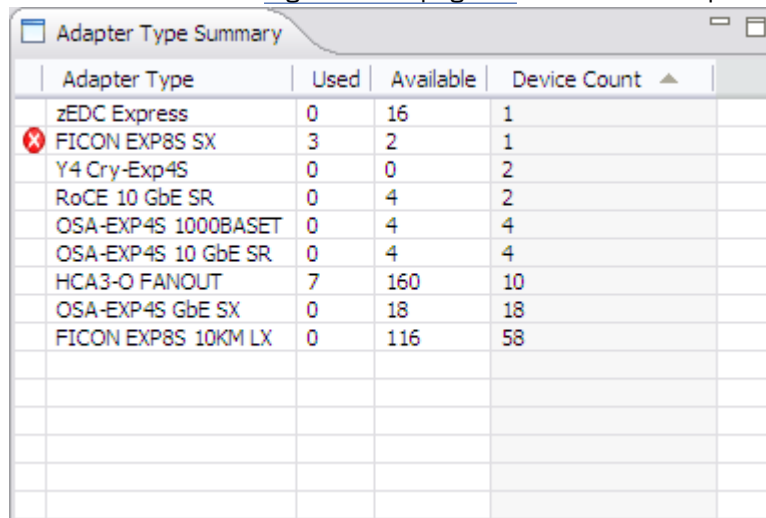
Figure 39. Channel Type Summary pane

**Note:** For information about sorting tabular information, see [“Sorting information” on page 25](#).

The Adapter Type Summary pane displays a table with the following columns:

#### (Blank or X in red circle)

This column either is blank or contains an X in a red circle. An X indicates the value in the Used column is greater than the value in the Available column. This means there is not sufficient hardware to handle the CHPIDs assigned in the IOCP file. [Figure 39 on page 32](#) shows an example in which the first column is blank. [Figure 40 on page 32](#) shows an example in which the first column includes Xs:



Adapter Type	Used	Available	Device Count
zEDC Express	0	16	1
X FICON EXP8S SX	3	2	1
Y4 Cry-Exp4S	0	0	2
RoCE 10 GbE SR	0	4	2
OSA-EXP4S 1000BASET	0	4	4
OSA-EXP4S 10 GbE SR	0	4	4
HCA3-O FANOUT	7	160	10
OSA-EXP4S GbE SX	0	18	18
FICON EXP8S 10KM LX	0	116	58

Figure 40. Adapter Type Summary pane with row with Xs in first column

This picture shows the Adapter Type Summary pane with Xs in the first column.

An X indicates one of the following:

- An IOCP type that has no hardware defined for it or more attempted assignments than available. (If there is no hardware defined, the Available column contains 0. For more attempted assignments, the number in the Used column exceed that in the Available column.)
- A type named that is invalid for that configuration. (For example, if you have an IOCP that has FICON and OSA, but the hardware has only FICON, the tool flags each OSA type with an X.)

In the first case, there is not enough hardware to handle the CHPIDs assigned in the IOCP input file.

**Adapter Type**

This column indicates the adapter type whose information is listed in the next two columns.

**Used**

This column specifies how many of the particular adapter type are assigned (of the total available).

**Available**

This column specifies how many of the particular adapter type are available.

Clicking the column heading sorts the column in descending order. If you click again, the tool performs the sort and changes the direction of the arrow. You can click the arrow (which is pointing up) to sort the column in ascending order. For details about sorting, see [“Sorting information” on page 25](#)

**Device Count**

The column lists the number of cards for each particular adapter type.

## Performing hardware resolution

An X in a red circle in the first column of the Hardware Resolution pane indicates a hardware resolution problem. [Table 4 on page 34](#) lists the possible Status messages, their explanations, and actions for resolution (if required).

Table 4. Status messages

Status	Explanation	Resolution (if required)
No hardware found	<p>AID values or PCHID values are present that are not found in the hardware. This situation could occur when you are replacing hardware for an MES and the IOCP file contains a PCHID value for the old hardware. (The IOCP file contains a PCHID value for the hardware being removed.)</p>	<p>If you have any CHPIDs of IOCP type CIB or CS5, the CHPID Mapping Tool cannot automatically assign these CHPIDs. If the AID assignment in the IOCP file is not valid, you can reset it during hardware resolution. You can then use manual mapping to assign the CHPIDs to AIDs.</p> <p>Perform the following steps for CIB and CS5 CHPIDs:</p> <ol style="list-style-type: none"> <li>1. Remove the AID values. To do so, see <a href="#">“Performing hardware resolution to remove PCHIDs”</a> on page 35.</li> <li>2. Do one of the following: <ul style="list-style-type: none"> <li>• Inside the CHPID Mapping Tool, perform manual mapping to associate these CHPIDs with AIDs. See <a href="#">“Performing manual mapping”</a> on page 87.</li> <li>• Assign the AID values outside the tool, for example, using hardware configuration definition (HCD). Replace the IOCP file; see Steps <a href="#">“2”</a> on page 45-<a href="#">“4”</a> on page 46.</li> </ul> </li> </ol>
	<p>Used IOCP types or adapter types exceed the number available. If there are more IOCP types than available, the Adapter Type (in the Hardware Resolution pane) might be empty. If there are more used than available adapter types, the tool indicates this deficiency in the Adapter Type Summary pane, in the Used and Available columns.</p>	<p>You need to do one of the following:</p> <ul style="list-style-type: none"> <li>• Change the IOCP file</li> <li>• Purchase additional hardware.</li> <li>• Ignore the CHPID. To do so, see <a href="#">“Performing hardware resolution for over defined CHPIDs”</a> on page 40</li> </ul>
Select at least one adapter type.	A adapter type is not assigned to the current row.	Assign a adapter type to IOCP type. See <a href="#">“Performing hardware resolution for a type mismatch”</a> on page 38.
<i>Adapter_type</i> is not compatible with <i>IOCP_type</i> .	Adapter type assigned for the CHPID is not compatible with the IOCP type specified by the IOCP file.	See <a href="#">“Performing hardware resolution for a type mismatch”</a> on page 38.
<p>Required hardware for type <i>IOCP_type</i> not available.</p> <p>Example: Required hardware for type FC not available.</p>	The CHPID Mapping Tool found no hardware for the specified IOCP type.	You need to change the IOCP file or obtain additional hardware

Table 4. Status messages (continued)

Status	Explanation	Resolution (if required)
PCHID_1 moved to new channel ID: <i>PCHID_2</i> Example: 520 moved to 1E2	You are replacing hardware for an MES, and the IOCP file contains a PCHID value for the old hardware, which is being removed. This PCHID value has moved from an old machine to the PCHID value for the new hardware . <i>PCHID_1</i> is the first PCHID value (for example, 520) and <i>PCHID_2</i> is the second PCHID value (for example, 1E2).	This status is an informational message; no hardware resolution is required. The message informs you of the new location so you can change this if you prefer a different assignment.

### Performing hardware resolution to remove PCHIDs

Removing a PCHID disassociates the PCHID from the CHPID.

#### Removing a single PCHID – PCHID column method

To remove the PCHID for a single CHPID: double click in the PCHID column of the target row. Figure 41 on page 35 shows the Hardware Resolution pane before double clicking in the PCHID column of the first row.

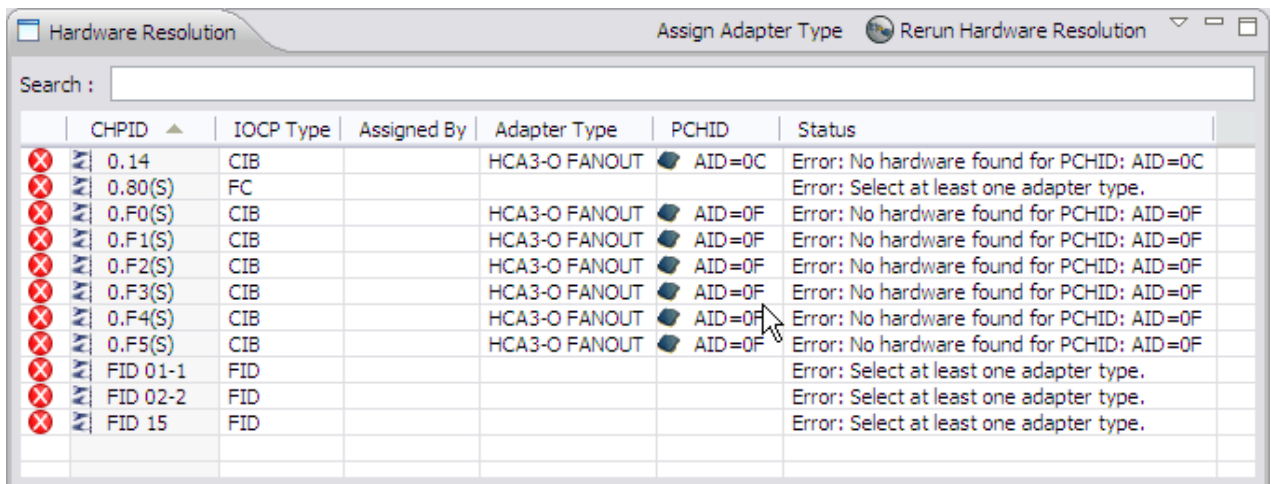


Figure 41. Hardware Resolution pane before performing hardware resolution

Figure 42 on page 36 shows the results of clicking in the PCHID column of the first row. The tool makes the following changes:

- Changes the X in a red circle to a green check mark.
- Removes the information from the PCHID column.
- Removes the information describing the problem in the Status column.

CHPID	IOCP Type	Assigned By	Adapter Type	PCHID	Status
0.14	CIB		HCA3-O FANOUT		Attention: The CHPID for this CIB must be mapped using Manual Mapping prior to enabling Automatic Mapping.
0.80(S)	FC				Error: Select at least one adapter type.
0.F0(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F1(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F2(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F3(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F4(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F5(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
FID 01-1	FID				Error: Select at least one adapter type.
FID 02-2	FID				Error: Select at least one adapter type.
FID 15	FID				Error: Select at least one adapter type.

Figure 42. PCHID is removed from PCHID column in target row

**Note:** If the IOCP file contains an error, for example a CHPID line contains FCX rather than FC, double clicking in the PCHID column of this row displays the following error message:

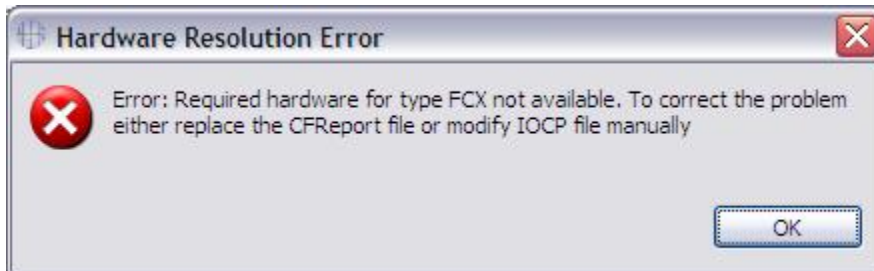


Figure 43. Hardware resolution error message

### Removing one or more PCHIDs - Action list method

Perform the following steps to remove one or more PCHIDs:

1. If you are removing PCHIDs for one or more CHPIDs, click the row to select the CHPIDs to remove holding down the Ctrl key if you are selecting multiple CHPIDs.
2. Right-click in the Hardware Resolution tabbed pane (anywhere except in the Channel Type column). The tool displays an action menu. [Figure 44 on page 36](#) shows an example of this menu.



Figure 44. Right-click displays list of actions

The list of actions is dynamic, depending on the context. The choices are explained in the information that follows.

**Note:** Alternately, you can click View Menu icon, which is the arrow across to the right of **Rerun Hardware Resolution**. The choices that the tool displays are the same as for right-clicking.

3. Do one of the following:
  - To remove the selected PCHIDs, select **Reset Current Selection**.  
The tool performs the following actions:
    - Replaces the X in a red circle with a green check mark.
    - Removes the information from the PCHID column.
    - Removes the information describing the problem in the Status column.

[Figure 45 on page 37](#) shows these changes for the last row.

CHPID	IOCP Type	Assigned By	Adapter Type	PCHID	Status
0.14	CIB		HCA3-O FANOUT		Attention: The CHPID for this CIB must be ...
0.80(S)	FC				Error: Select at least one adapter type.
0.F0(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F1(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F2(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F3(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F4(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
0.F5(S)	CIB		HCA3-O FANOUT		Attention: The CHPID for this CIB must be ...
FID 01-1	FID				Error: Select at least one adapter type.
FID 02-2	FID				Error: Select at least one adapter type.
FID 15	FID				Error: Select at least one adapter type.

Figure 45. Results of clicking **Reset Current Selection**

**Note:** This method works for an IOCP Type of CIB (the Channel Type is IFB link) and CS5 (the Channel Type is PCIe). However, if you click **Reset Current Selection** for an IOCP type of FC, you receive the following message:

Error: Select at least one adapter type.

Use the steps under [“Performing hardware resolution for a type mismatch”](#) on page 38 to perform hardware resolution for this situation.

- For other methods to remove multiple PCHIDs, select one of the following choices:

#### **Reset "No hardware found" Entries**

Removes the PCHID values for only those rows with an X in a red circle in the first column and a value of **Error: No hardware found** in the Status column. (An X in a red circle indicates an error, and the Status column provides information about the nature of the error.) You are recommended to select this action.

#### **Reset Incompatible (Hardware - I/O) Entries**

Removes the PCHID values for rows whose channel type is not compatible with the IOCP type. The Status column provides specifics. Here are some examples of the types of messages the tool might display in the Status column:

##### **Crypto Exp2 is not compatible with OSD**

The Crypto Express2 channel type is not compatible with an IOCP type of OSD.

##### **ESCON is not compatible with FC**

The ESCON channel type is not compatible with an IOCP type of FC.

##### **FICON EXP4 4KM LX is not compatible with FCV**

The FICON Express4 4KM LX is not compatible with IOCP type of FCV.

##### **OSA-E2 GbE SX is not compatible with FC**

The OSA-E2 GbE SX channel type is not compatible with an IOCP type of FC.

##### **OSA-E2 GbE SX is not compatible with FCV**

The OSA-E2 GbE SX channel type is not compatible with an IOCP type of FCV.

#### **Reset All**

Removes all PCHID values (in both rows with Xs in red circles *and* rows with green check marks). The action is the same as if you selected all of the three previously described choices. You are *not* recommended to select this action.

#### **Note:**

If you select **Reset All**, the tool displays the following message:

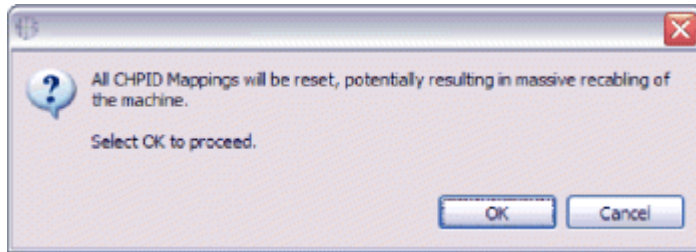


Figure 46. Message window

To confirm you want to continue, you need to click **OK**.

### Performing hardware resolution for a type mismatch

A type mismatch occurs in two situations:

- When you are performing an MES and the channel type in the base does not match the type in the MES. In this case, the IOCP input file contains a PCHID value for the old hardware. For example, suppose you OSD CHPID assigned to a 1000BaseT PCHID in the old machine and that PCHID is now an OSA Express3 in the new machine. They are compatible but might not support the same functions. For this type of mismatch, you might receive the following message:

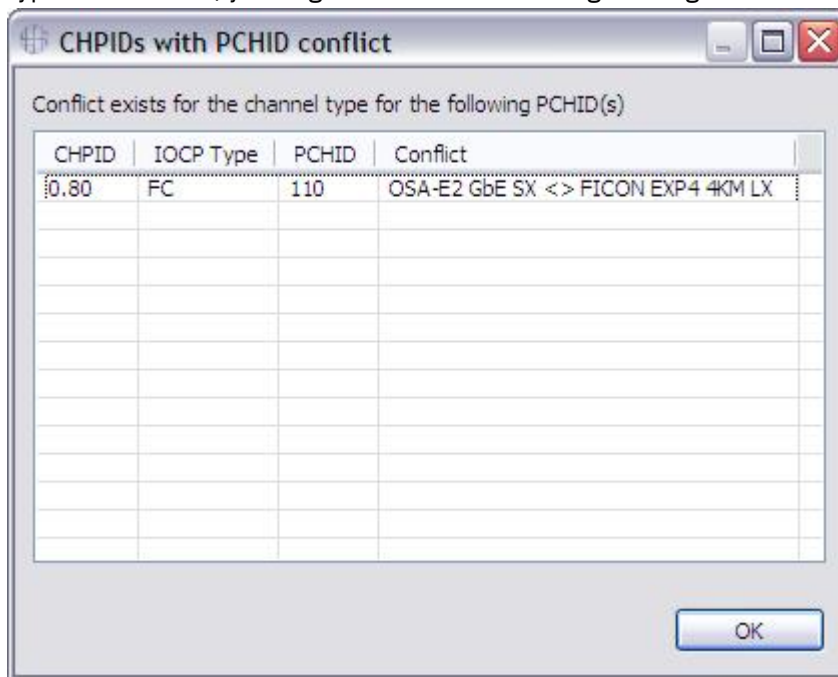


Figure 47. CHPIDs with PCHID conflict

- When the associated channel type is not appropriate for a PCHID, you must resolve this by resetting the PCHID. For example, suppose the IOCP type is FC but the PCHID is associated with an ESCON card. You cannot assign the FC type to the ESCON card. For this kind of mismatch, you might receive the following message.

```
Adapter_type is not compatible with IOCP_type
```

#### **Adapter\_type**

Is ESCON, FICON, and so on.

#### **IOCP\_type**

Is FC, CIB, and so on.

(The information that follows concerns this kind of mismatch.)



A first optional step for resolving a type mismatch is to reset the PCHID by removing it. “Performing hardware resolution to remove PCHIDs” on page 35 describes how to reset the PCHID by removing it.

Perform the following steps to fix a type mismatch:

1. In the target row, click in the **Adapter Type** column.

The tool displays an arrow in the **Adapter Type** column of the target row. [Figure 48 on page 39](#) shows a row with the arrow.

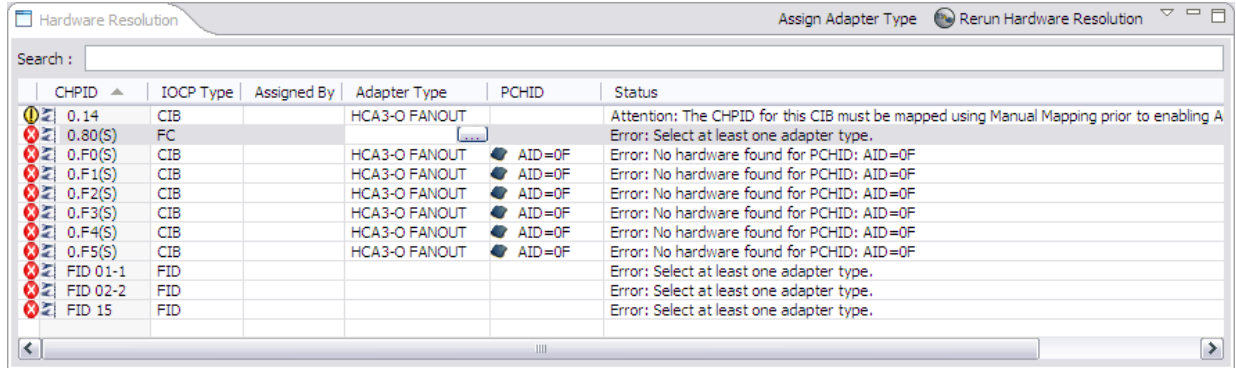


Figure 48. Arrow in Adapter Type column

2. Click the arrow. The tool displays a list of available card types for the CHPID. [Figure 49 on page 39](#) shows a list. The tool displays only types that are compatible for the CHPID.

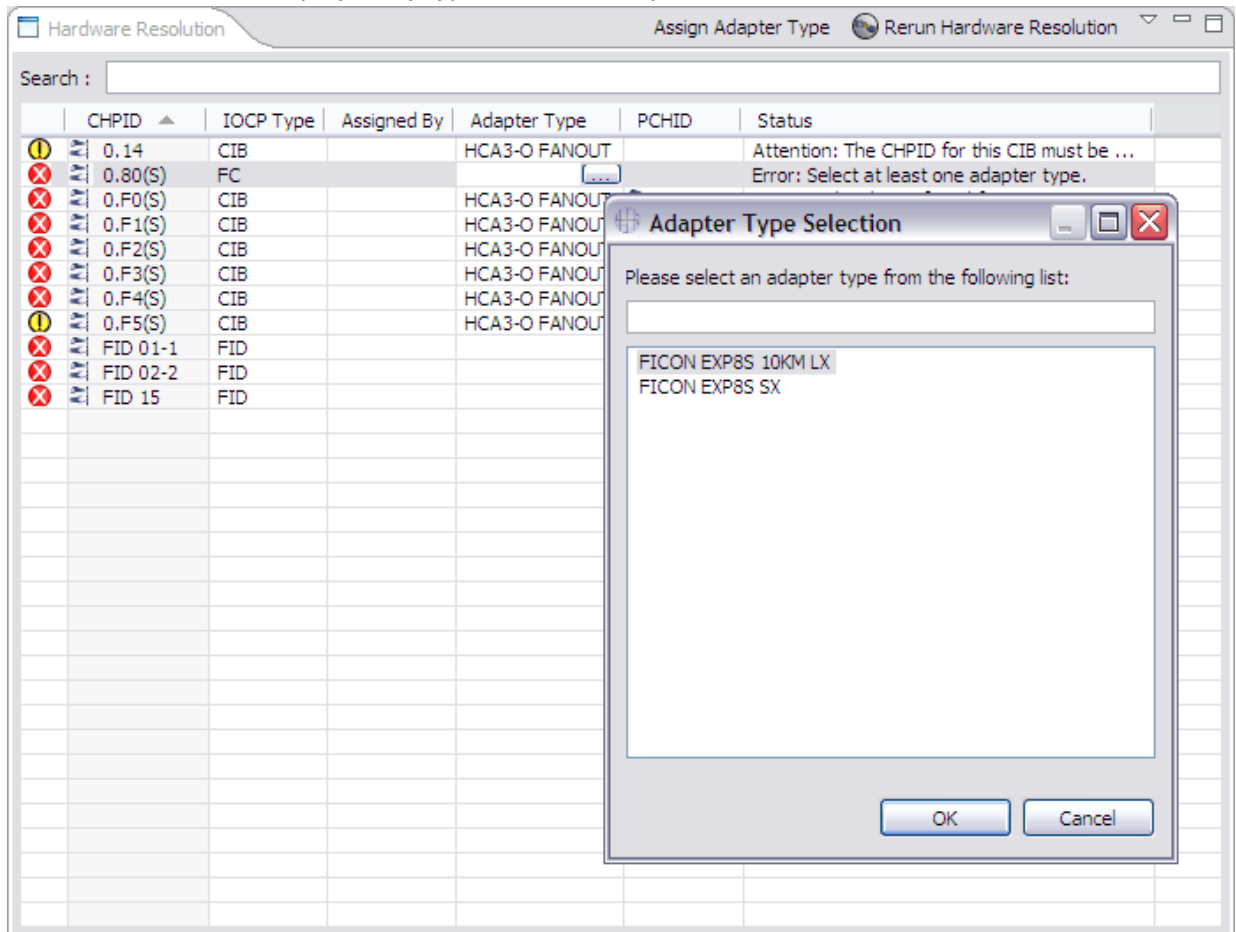


Figure 49. Adapter types list

**Note:** There might be only one selection in the list – the selection that already appears in the Adapter Type column for that row. In this case you cannot change the assigned channel type to eliminate a problem. You need to purchase additional hardware.

3. Select the card type from the list.

The tool makes the following changes:

- Replaces the X in a red circle with a green check mark
- Displays the type you selected in the Adapter Type column
- Removes the message in the Status column.

	CHPID	IOCP Type	Assigned By	Adapter Type	PCHID	Status
!	0.14	CIB		HCA3-O FANOUT		Attention: The CHPID for this CIB must be ...
✓	0.80(S)	FC		FICON EXP8S 10KM LX		
✗	0.F0(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✗	0.F1(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✗	0.F2(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✗	0.F3(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
✗	0.F4(S)	CIB		HCA3-O FANOUT	AID=0F	Error: No hardware found for PCHID: AID=0F
!	0.F5(S)	CIB		HCA3-O FANOUT		Attention: The CHPID for this CIB must be ...
✗	FID 01-1	FID				Error: Select at least one adapter type.
✗	FID 02-2	FID				Error: Select at least one adapter type.
✗	FID 15	FID				Error: Select at least one adapter type.

Figure 50. Results of selecting a channel type

## Performing hardware resolution for over defined CHPIDs

Over defined CHPIDs occurs when the number of used IOCP type exceeds the number available.

An optimal step for handling this case is to make the CHPIDs as Ignore.

Perform the following steps to accomplish this:

1. Select the CHPID rows you would like to ignore holding down the Ctrl key if you are selecting multiple CHPIDs.
2. Right-click in the Hardware Resolution tabbed pane (anywhere except in the Adapter Type column). The tool displays an action menu. [Figure 51 on page 40](#) shows an example of this menu.



Figure 51. Right-click displays list of actions

3. Select Ignore CHPID or Delete CHPID.

**Note:** The Delete CHPID will delete the CHPID from the Export IOCP files.

## Resetting hardware resolution changes

After you successfully perform hardware resolution, all the rows in the table in the Hardware Resolution pane have green check marks in the first column or exclamation points in yellow circles in the first column. [Figure 52 on page 41](#) shows this.

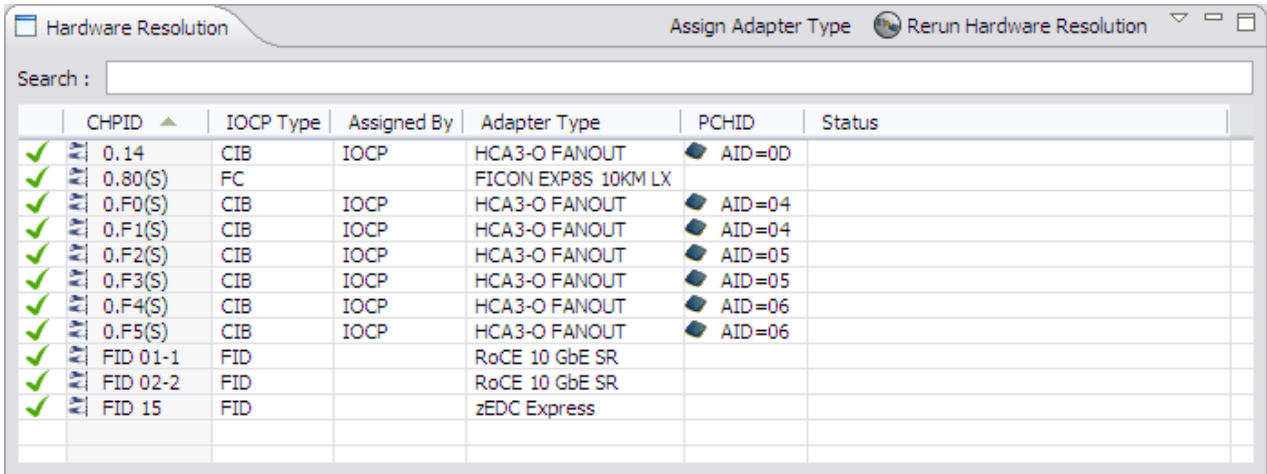


Figure 52. Hardware Resolution pane after hardware resolution

If you need to reset your hardware resolution changes, perform the following steps:

1. Click **Rerun Hardware Resolution**, which is across from the Hardware Resolution tab.

The Hardware Resolution window opens: This window indicates that continuing resets the changes.

2. If you want to change back the values in the Adapter Types column, click **Yes**. This resets the values as if you had reloaded the IOCP file.

Figure 53 on page 41 shows this.

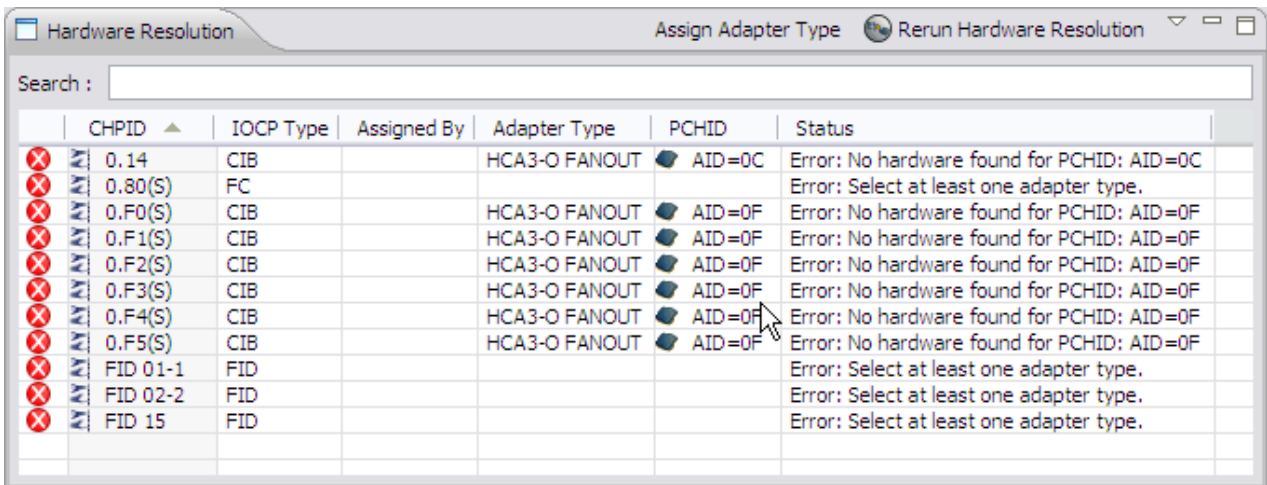


Figure 53. Hardware resolution is reset

## Hardware resolution problems and solutions

The following table lists some hardware resolution problems and possible solutions:

Problem	Actions
Insufficient hardware	Buy additional hardware or load a different IOCP input file.
The IOCP input file could contain channel definitions for adapter types that are not part of the new machine configuration.	Modify or remove those definitions in the IOCP.

Table 5. Hardware resolution problems and actions (continued)

Problem	Actions
There might be more adapter defined or implied than the machine can support. For example, if a machine is fully configured with the maximum number of CHPIDs, any definitions in the IOCP for internal coupling links cause the input to fail.	Remove adapters that are higher in number than the total number that the machine supports. You can see this information in the Adapter Type Summary pane of the Hardware Resolution view.
The IOCP input file could contain errors. For example, someone could edit a file to remove some of the channel definitions but fail to delete the control unit definitions referencing those channels. The source input must be accurate, and HCD must generate it or IOCP must verify it.	<p>Replace the IOCP input file. Ensure that the IOCP input file is accurate by using an IOCP file that hardware configuration definition (HCD) generated or that IOCP verified.</p> <p><b>Note:</b> The IOCP input file you provide to the tool by the direct output of HCD or IOCP must verify the input. The IOCP definitions must be output directly from a version of HCD/HCM that supports the system, or the appropriate level of ICP IOCP must verify it before you load it into the tool.</p>
The IOCP input file might have become corrupted during editing or during a file transfer. Some characters could be dropped or the asterisks (*) used for continuation indicators could be in the wrong column. The source file must be accurate and adhere to the syntax rules of IOCP.	<p>Replace the IOCP input file. Ensure that the IOCP input file is accurate by using an IOCP file that hardware configuration definition (HCD) generated or that IOCP verified.</p> <p><b>Note:</b> The IOCP input file you provide to the tool by the direct output of HCD or IOCP must verify the input. The IOCP definitions must be output directly from a version of HCD/HCM that supports the system, or the appropriate level of ICP IOCP must verify it before you load it into the tool.</p>

## Chapter 5. Miscellaneous tasks

This chapter includes information about how to perform various tasks. The tasks are mainly grouped according to how you access them.

- Performing tasks in the projects pane:
  - Creating a new project. See [“Creating and working with multiple projects”](#) on page 43.
  - Importing a deleted project. See [“Importing a deleted project”](#) on page 45.
  - Importing a different IOCP file. See [“Importing the IOCP file”](#) on page 45
- Setting Preferences. See [“Setting Preferences”](#) on page 46.
- Saving session information.
  - Saving an unnamed session. See [“Saving a session”](#) on page 48.
  - Exporting a named session. See [“Exporting an IOCP input file”](#) on page 51.
- Restoring a saved session. See [“Importing a saved session”](#) on page 49.
- Exporting an updated IOCP file. See [“Exporting an IOCP input file”](#) on page 51.

### Tasks accessed in the Projects pane

You have already used the Projects pane to create a project. See [“Creating a project”](#) on page 9 for details. You can perform additional tasks in the Projects pane.

Perform the following steps to perform an additional task in the Projects pane:

1. Make sure the *project name* of the target project is the one that is highlighted in the Projects pane.
2. Right-click in the Projects pane. This action displays a menu. [Figure 54 on page 43](#) shows this menu.

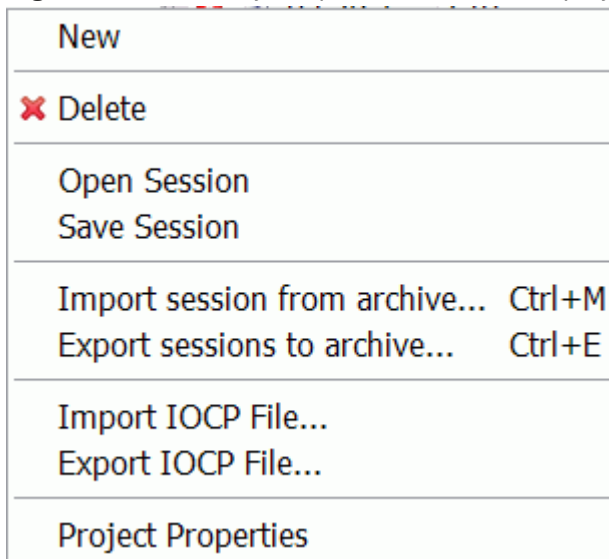


Figure 54. Right clicking displays actions

3. Click an action to perform a task. The sections that follow describe performing specific tasks.

### Creating and working with multiple projects

You have already created a project; see [“Creating a project”](#) on page 9. However, the CHPID Mapping Tool allows you to create multiple projects and to display information about the project you choose.

To create a new project, perform the steps under [“Creating a project”](#) on page 9.

Figure 55 on page 44 shows the Projects pane with two projects.

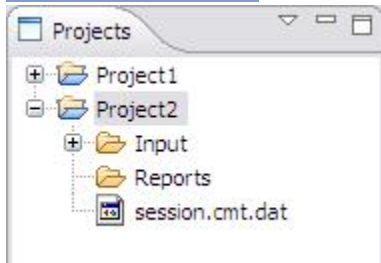


Figure 55. Projects pane with two projects

The contents of the panes other than the Projects pane depend on which project you select as active. You can switch back and forth between multiple projects by selecting the one you want active.

### Switching to a different project

Perform the following steps to switch to a different project.

1. In the Projects pane, double-click the name of the project you want to view. If you have made any changes to the information in the project you are exiting, the tool saves the changes before loading the other project. The tool displays the progress of saving the project in the bottom right corner of the window.

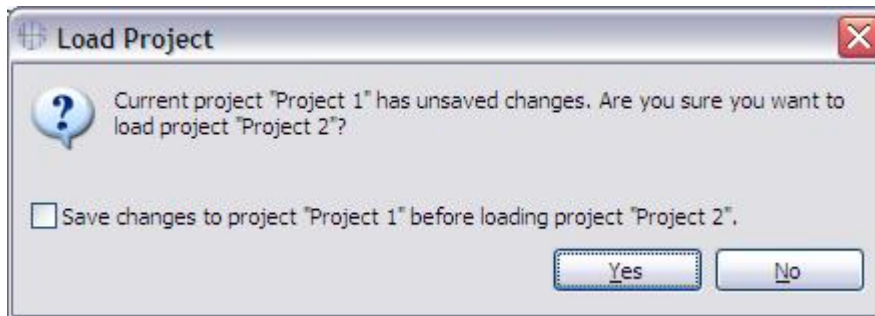


Figure 56. Progress indicator for saving a project

After saving, the tool displays the Load Project window. Figure 57 on page 44 shows this window.

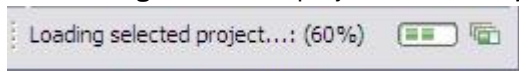


Figure 57. Load Project indicator window

### Deleting a project

Perform the following steps to delete a project:

**Note:** Verify the project you want to delete is selected in the Projects pane.

1. Right-click in the Projects pane.
2. Click: **Delete**.

The tool opens the Confirm Projects Delete window. Figure 58 on page 45 shows this window.

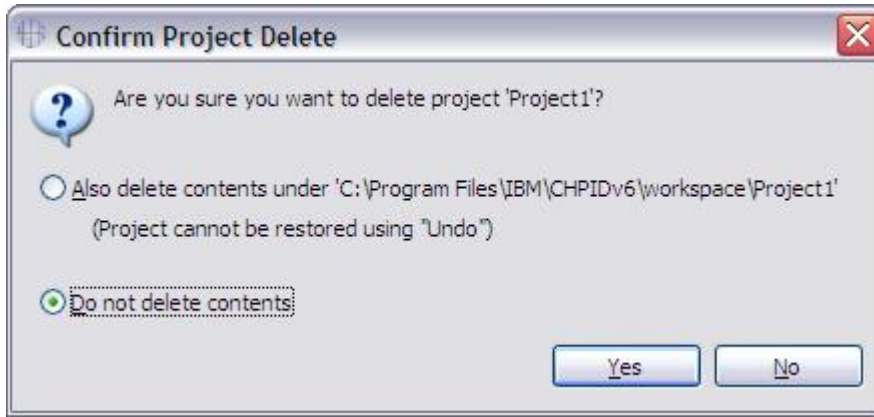


Figure 58. Confirm Project Delete window

3. Optionally, to delete the *project\_name* folder (under the **workspace** folder) click **Also delete contents under path**. By default, the tool selects **Do not delete contents**.
4. Click **Yes** to delete the project.

### Importing a deleted project

If you selected **Do not delete contents** when deleting a project, you can import the contents back.

Perform the following steps to import a deleted project:

1. Right-click in the Project's pane.
2. Click **New > Standard CMT Project**.
3. Type the name of the deleted project. The tool detects the project automatically.
4. Click **Finish** to load the deleted project.

### Importing the IOCP file

If you have not imported an IOCP input file when creating a project, you can do so later.

Perform the following steps to import an IOCP input file:

1. Right-click in the Projects pane.
2. Click **Import IOCP File**. The tool opens the window where you specify the IOCP file. [Figure 59 on page 46](#) shows this window.

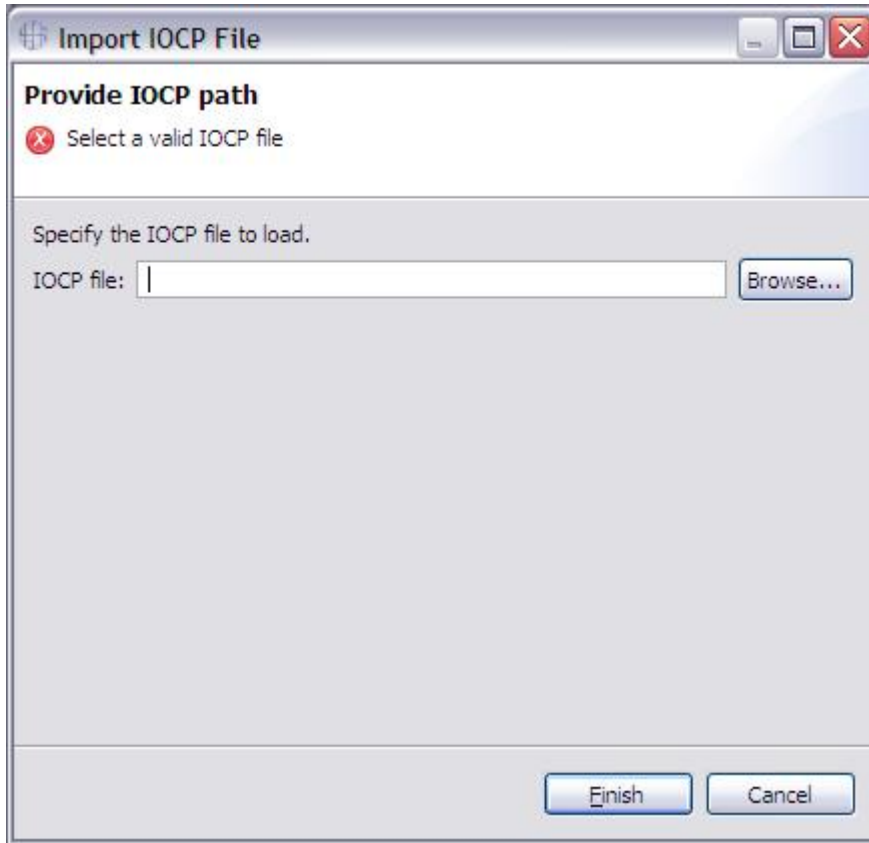


Figure 59. Window for specifying IOCP file

3. Do one of the following:
  - Type the IOCP input file path and name in the **IOCP input file** field.
  - Click **Browse**, and navigate to the IOCP input file you want to use and select it. Click **Open**.
4. Click **Finish**. This loads the IOCP input file.

After loading the IOCP input file, you must right click on the new file (located in the input folder), and select Read Selected IOCP if you would like to make this the active IOCP input file for the project.

## Setting Preferences

---

The CHPID Mapping Tool allows you to set several types of preferences.

General Preferences include the following items:

### Temporary folder location

The directory where files are located until the tool saves session information.

### Autosave interval

The amount of time between automatic saves that the tool performs. The default is 5 minutes.

Report preferences include items such as page and margin sizes. Availability preferences allow selection of the default manual mapping view. Hardware resolution preferences include an option to disable adapter insufficient hardware pop-up messages.

Perform the following steps to view or change preferences:

1. Click **Window > Preferences**. The tool displays the Preferences window. [Figure 60 on page 47](#) shows this page.



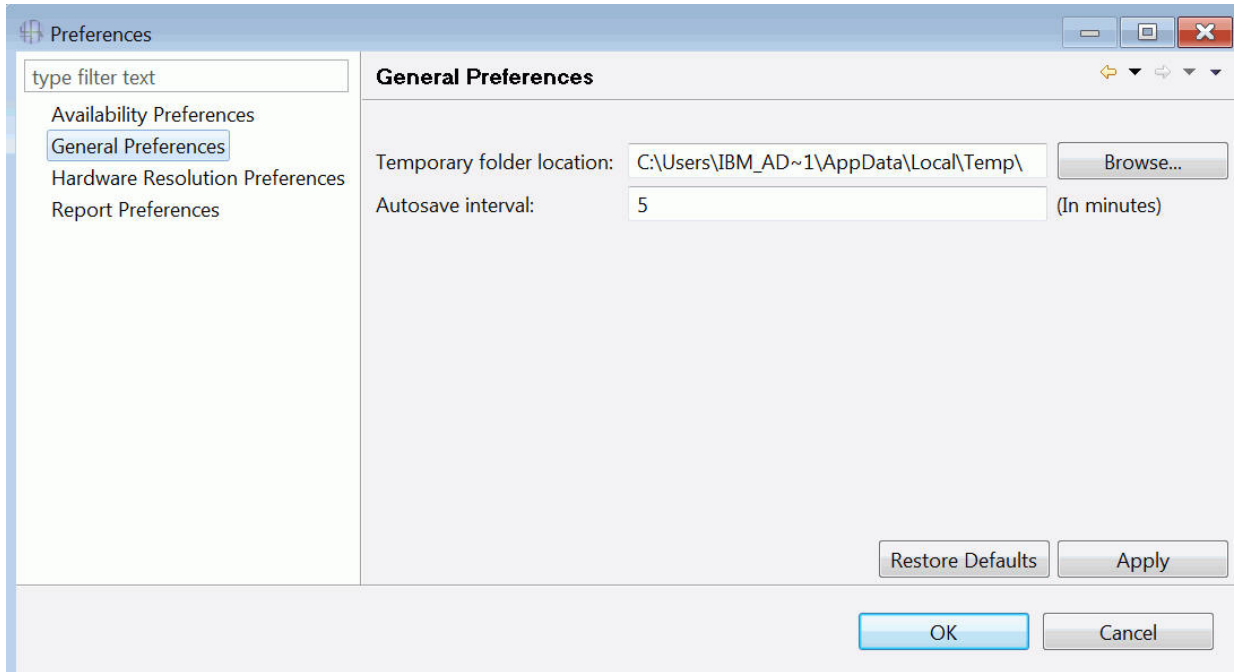


Figure 60. The General Preferences page of the Preferences window

2. Ensure the Preference page you want is selected in the navigation tree on the left. Figure 61 on page 47 and Figure 62 on page 48 shows the Preferences window with the Hardware Resolution Preferences and Report Preferences pages selected.

The Hardware Resolution Preferences page allows you to turn off pop-up messages when running hardware resolution.

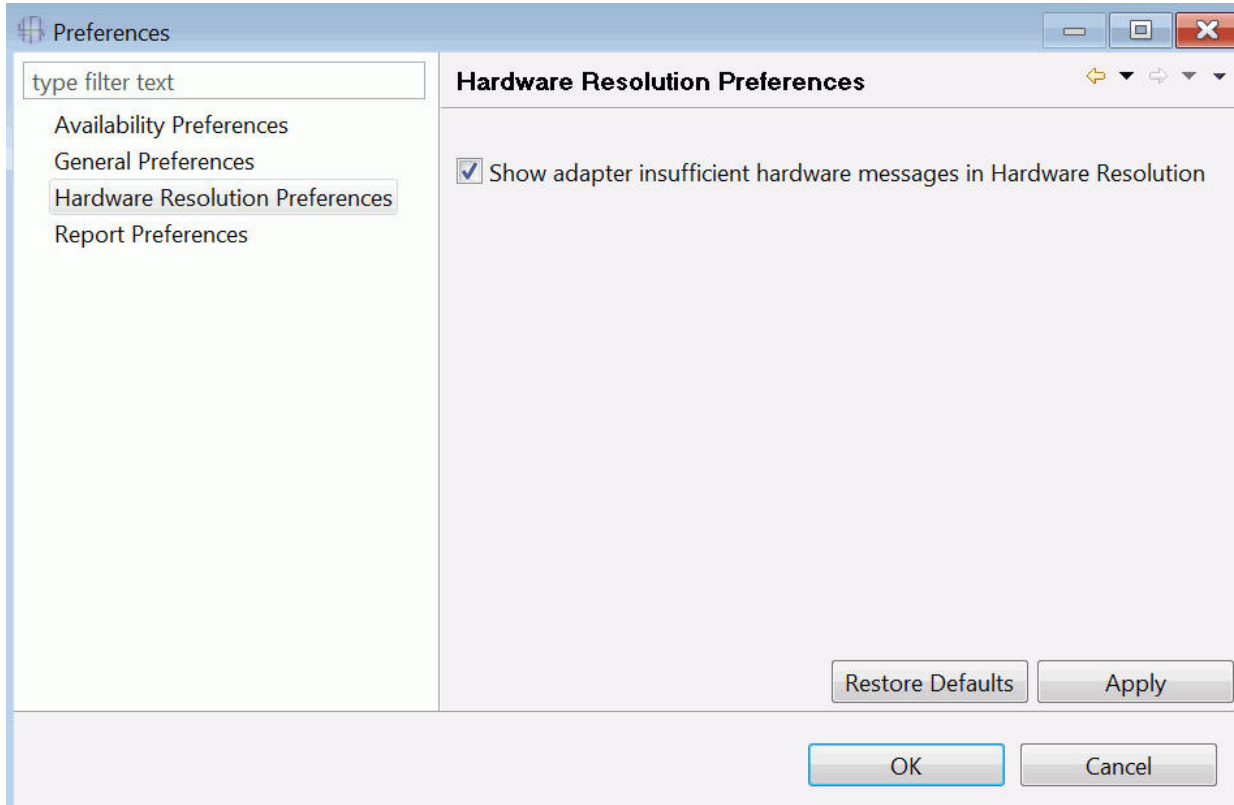


Figure 61. The Hardware Resolution Preferences page of the Preferences

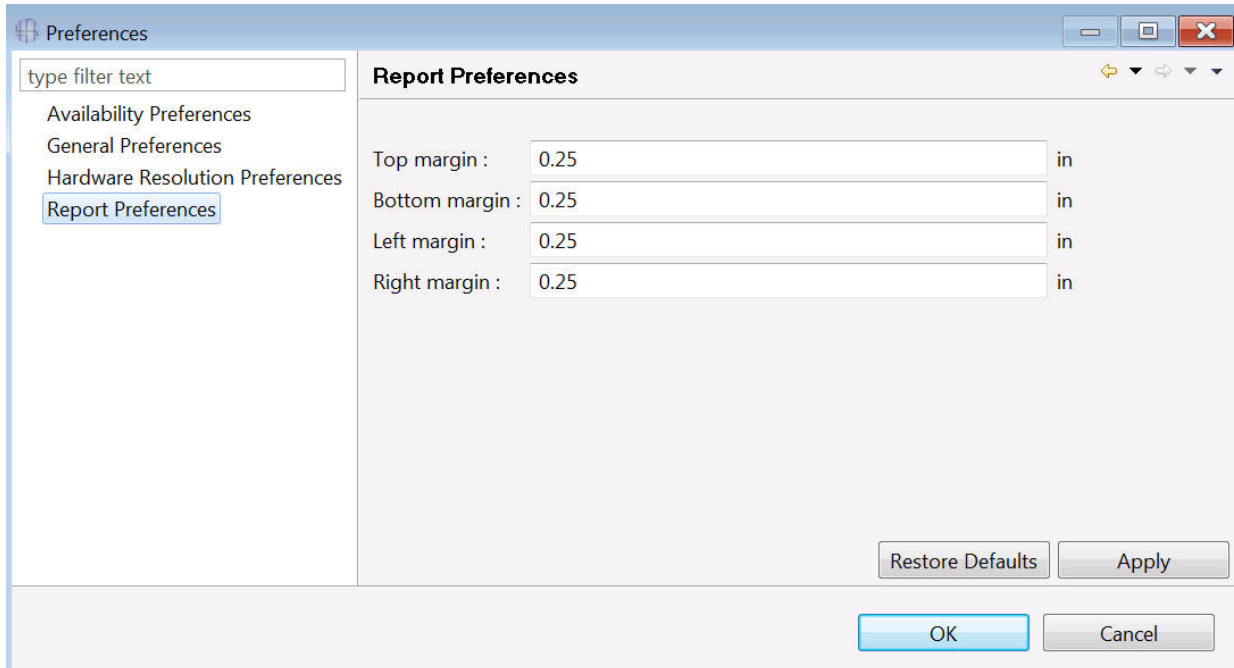


Figure 62. The Report Preferences page of the Preferences window

3. Make any changes you want. When you are done making changes on a page, click **Apply** to save your changes but keep the Preferences window open or click **OK** to save your changes and close the Preferences window.

## Saving a session

The CHPID Mapping Tool automatically saves your session every  $n$  minutes, depending on the value you have set in preferences. By default, this value is 5 minutes. The tool also saves your session before exiting.

Perform the following steps to save session information: Click **File > Save Session**. [Figure 63 on page 48](#)

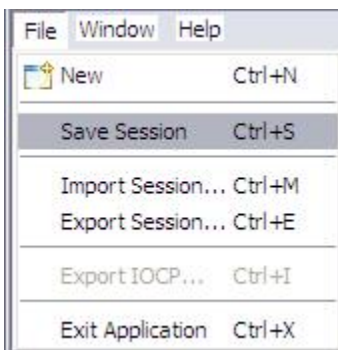


Figure 63. The File and Save Session selections

## Exporting sessions

You might need to export session information to send project data to someone working on the same project or to provide problem information to IBM Support. (See “Importing a saved session” on page 49 for details on using the received project data.) Exporting a session zips up the following files and folders:

- Input folder
  - CFReport folder - contains CFReport file

- IOCP folder - contains IOCP file
- Reports folder
- The session.cmt.edat file

The tool exports these items into a file whose name you specify. It appends the extension `.cmt.edat` to the exported file. (The e in edat stands for *export*.)

Perform the following steps to export a session:

1. Click **File > Export Session**. The tool opens the Export Session window. [Figure 64 on page 49](#) shows this window.

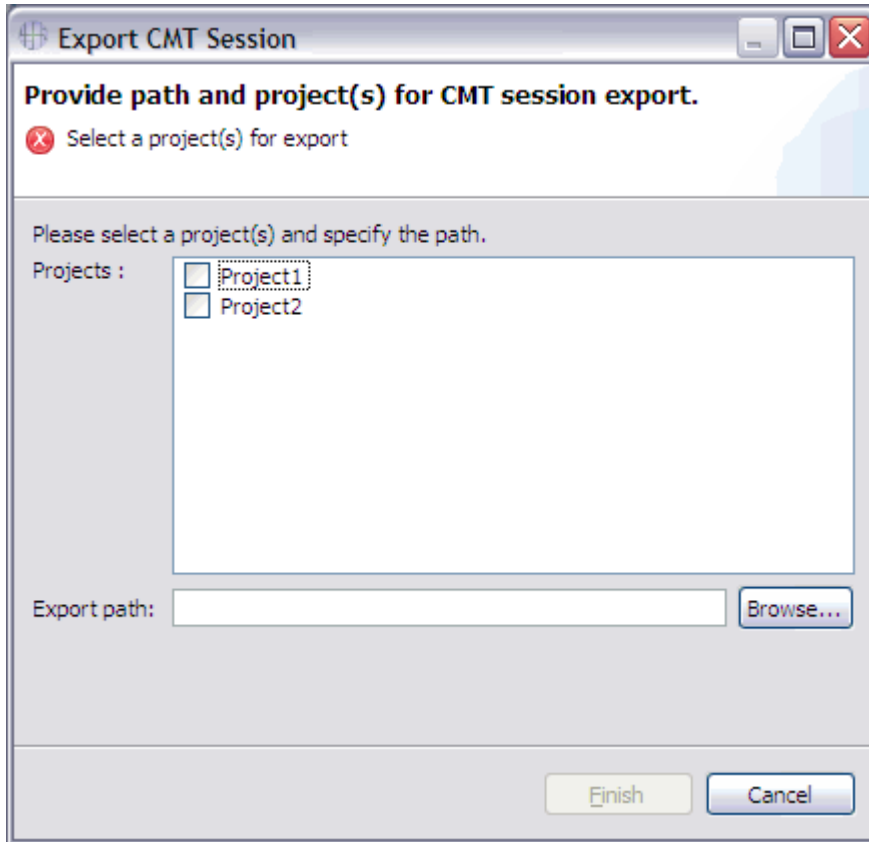


Figure 64. Export Session window

2. Select the project name in the **Projects** field.
3. Complete the **Export path** field.

You can type the path in the field. Alternately, you can click **Browse**, navigate to the folder and select it, and click **OK**.

**Note:** Use a directory other than the Workspace directory.

4. Click **Finish**. The tool saves the `.cmt.edat` file in the folder you specified.

## Importing a saved session

You can import a session that has been exported. (See [“Exporting sessions” on page 48](#) for information about exporting a session.)

Perform the following steps to import an exported session:

1. Click **File > Import Session**. This tool opens the Import CMT Project window. [Figure 65 on page 50](#) shows this window.

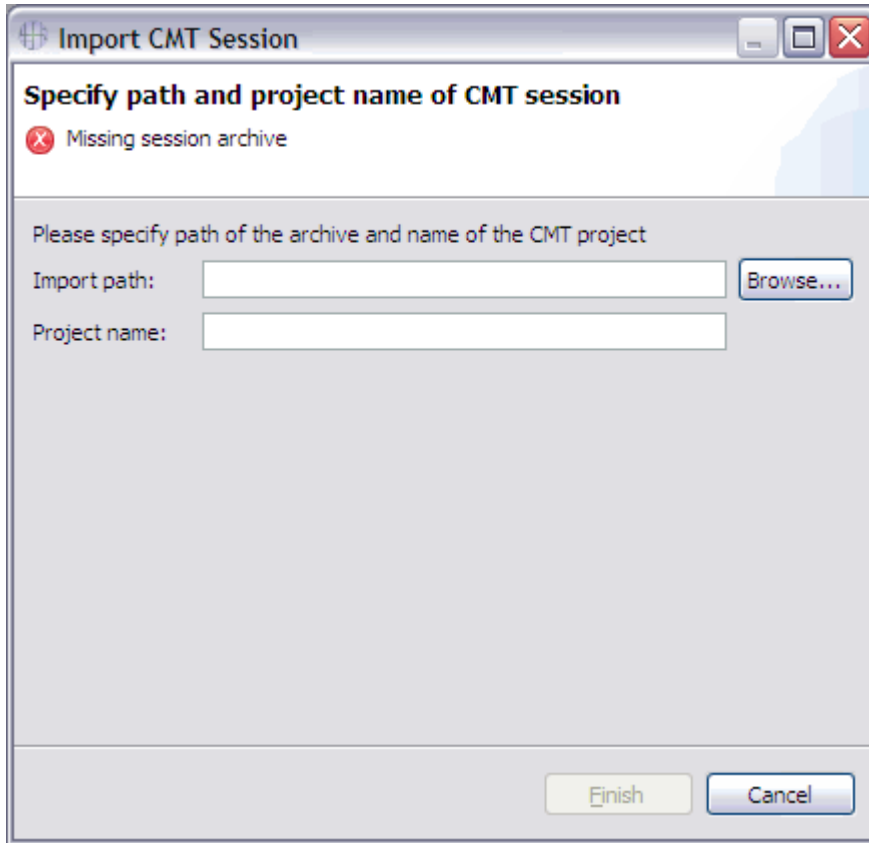


Figure 65. Import CMT Project window

step opens the a window where you select the session file you want to import.

2. Type the full path of the archive file in the Archive name field or use Browse and navigate to the file, select it, and click Open. The tool fills in the **Session name** based upon the file you specify.
3. Click **Finish**.

**Note:**

- a. When exporting a session, the tool zips the **Input** folder (with folders containing IOCP and CFReport files), **Reports** folder, and **session.cmt.dat** file into a file with an extension of **.cmt.edat**. When importing a session, the tool unpacks these files. Figure 66 on page 51 shows an example in which the session to import has a file name of **ABC Project.cmt.edat**. The tool fills in the **Session name** of **ABC Project**.

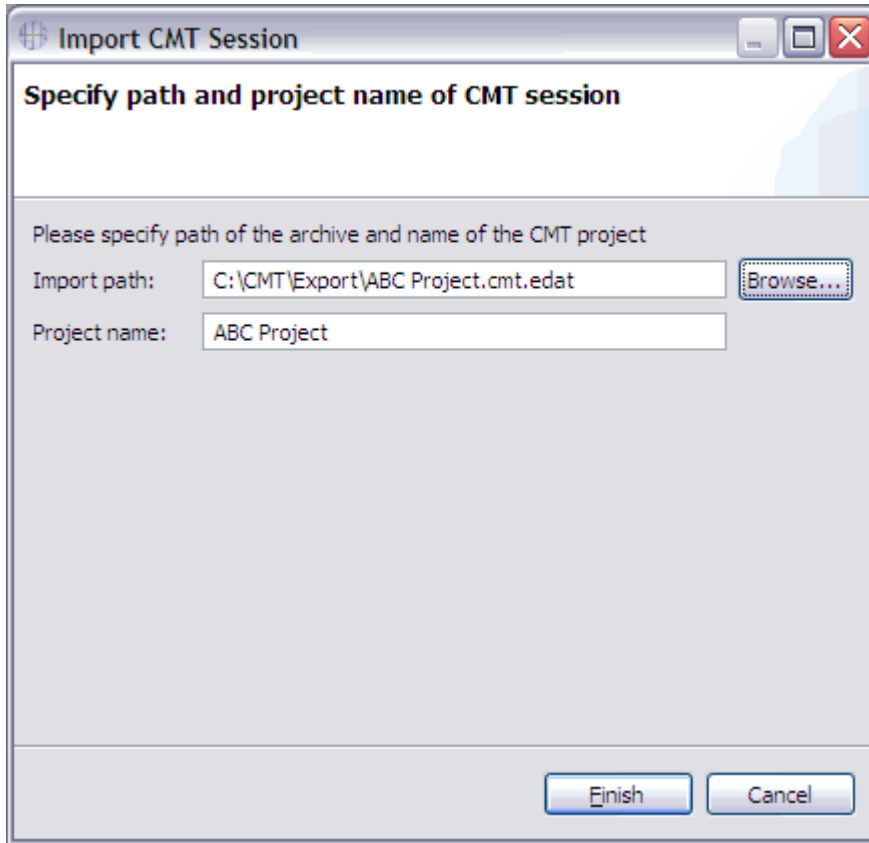


Figure 66. Importing a File

After the user clicks **Finish**, the project, named ABC Project, is included in the Projects pane. The project includes the **Input** folder (with folders containing IOCP and CFReport files), **Reports** folder, and **session.cmt.dat** file. Figure 67 on page 51 shows the ABC Project in the Projects pane.

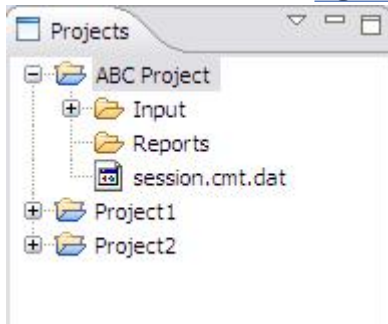


Figure 67. Project pane contains the project

- b. The tool stores the project files under the *project\_name* directory. For example, the tool saves the `session.cmt.dat` file in the ABC Project folder.

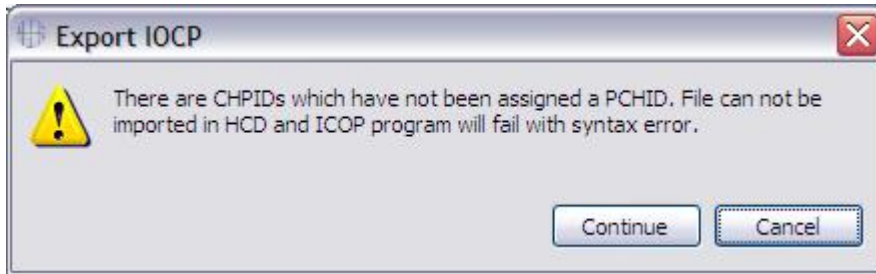
## Exporting an IOCP input file

This task is not available until after you have loaded an IOCP input file during project creation or afterward.

Perform the following steps to export an IOCP input file.

1. Click **File** > **Export IOCP**.

- If you assigned temporary AID values to CIB or CS5 CHPIDs, the tool displays a warning message that you should manually fix these (using an editor outside the tool) before exporting the IOCP input file. Click **Cancel** to abort exporting the IOCP input file or **Continue**.
- If you have unassigned CHPIDs, the tool displays a warning message that you should assign these before exporting the IOCP input file. Click **Cancel** to abort exporting the IOCP input file or **Continue**.



If the tool displays no warning or you choose to continue after a warning, the tool opens the Export IOCP input File window. Figure 68 on page 52 shows this window.



Figure 68. Export IOCP Input File window

2. Complete the **Export Path** field.

You can type the path in the field. Alternately, you can click **Browse**, navigate to the folder and select it, and click **OK**.

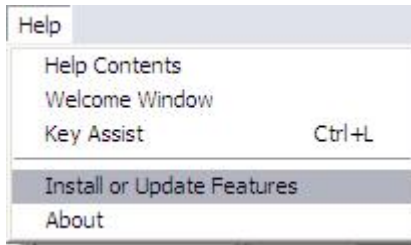
3. Type in the IOCP name in the **IOCP Input File** field.
4. After the IOCP Input File field is complete, click **Finish**.

## Updating the tool

Before you begin: Download the update (.zip) file from Resource Link.

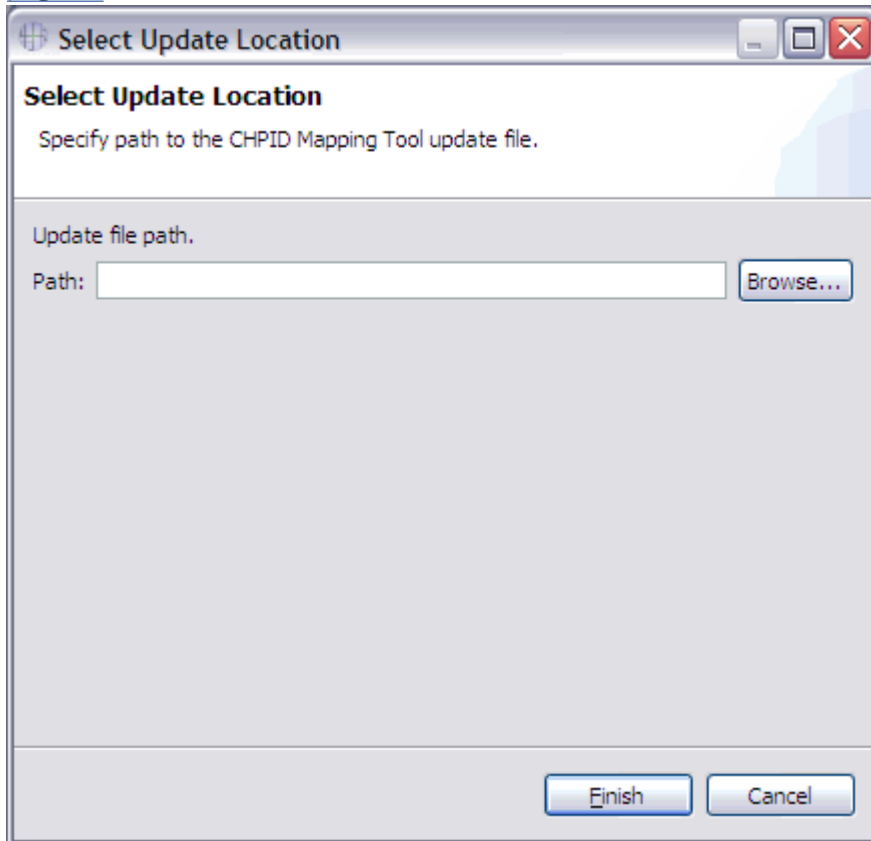
Perform the following steps to update the CHPID Mapping Tool program:

1. Click **Help>Install or Update Features**. [Figure 69 on page 53](#) shows these selections.



*Figure 69. Help menu includes Install or Update Features*

After you make these selections, the tool opens the Select Update Location window. [Figure 70 on page 53](#) shows this window.



*Figure 70. The Select Update Location window*

2. Complete the **Path** field.
  - a. Click **Browse**. The tool displays the Open window.
  - b. Click the appropriate file in the Open window to select it, and click **Open**. The tool displays the Select Update Location window with the Path field completed.

Alternately, you can type the path and file name in the Path field to complete it.
3. Click **Finish**. The Search Results window displays the content found from the specified path.
4. Select **CHPID mapping tool update archive** and click **Next**.

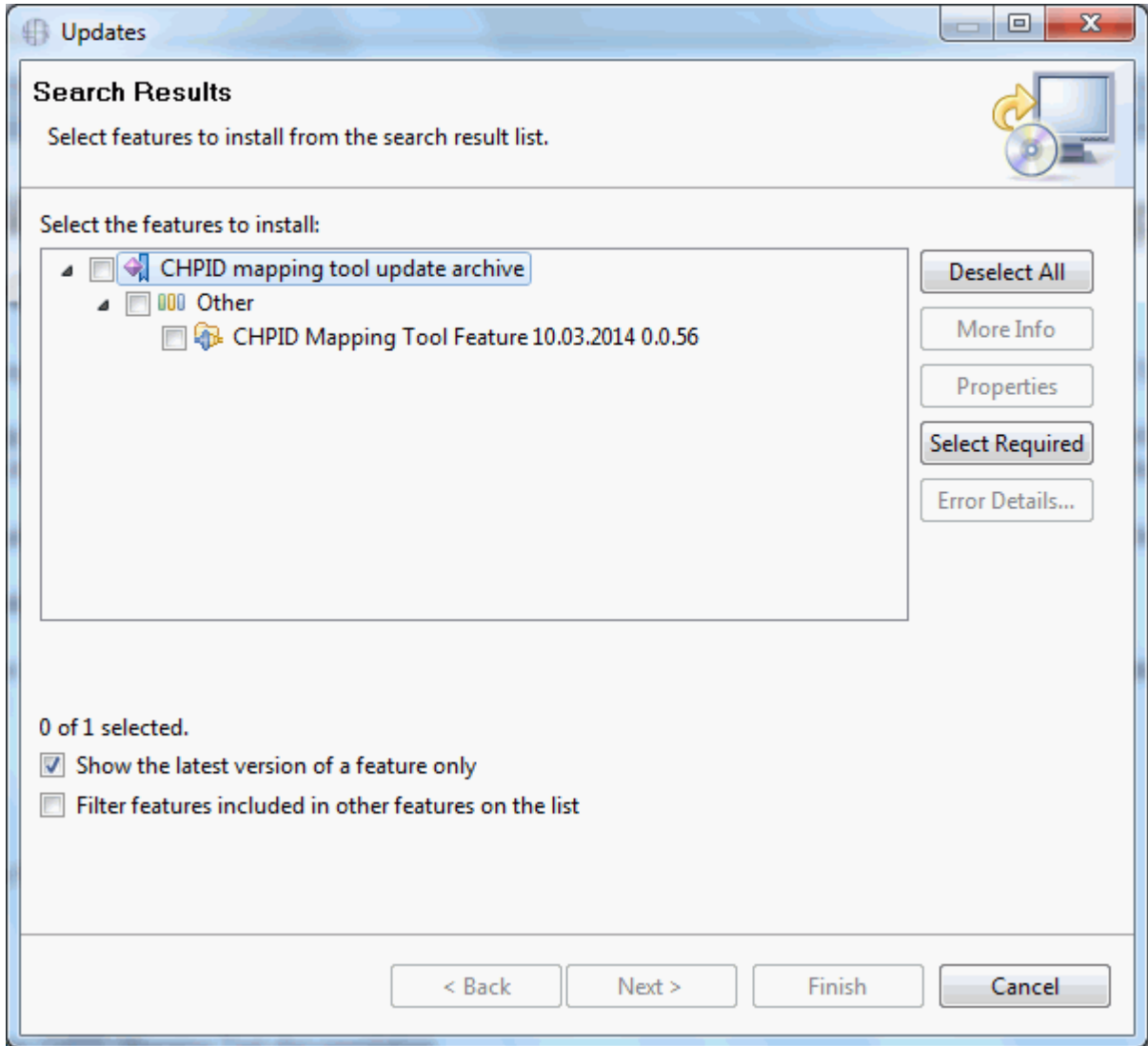


Figure 71. Install window - with search results from path

5. The Install window opens, displaying the licensing agreement. [Figure 72 on page 55](#) shows this window.



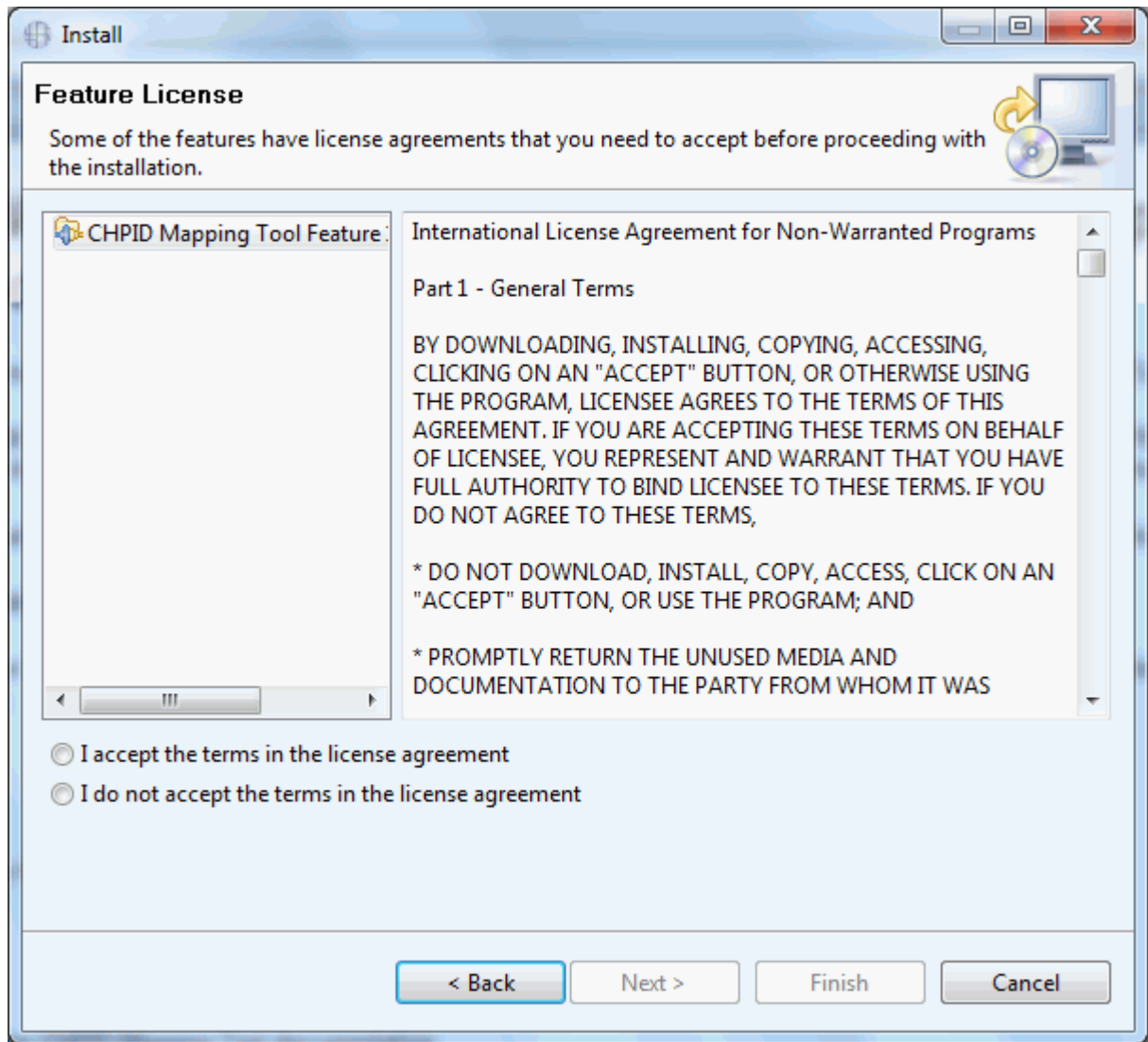


Figure 72. Install window - with feature licensing agreement

6. Click to select I accept the terms of the license agreement. (Selecting a radio button makes **Next** available.) Click **Next**. The Install window displays installation information. [Figure 73](#) on page 56 shows an example:

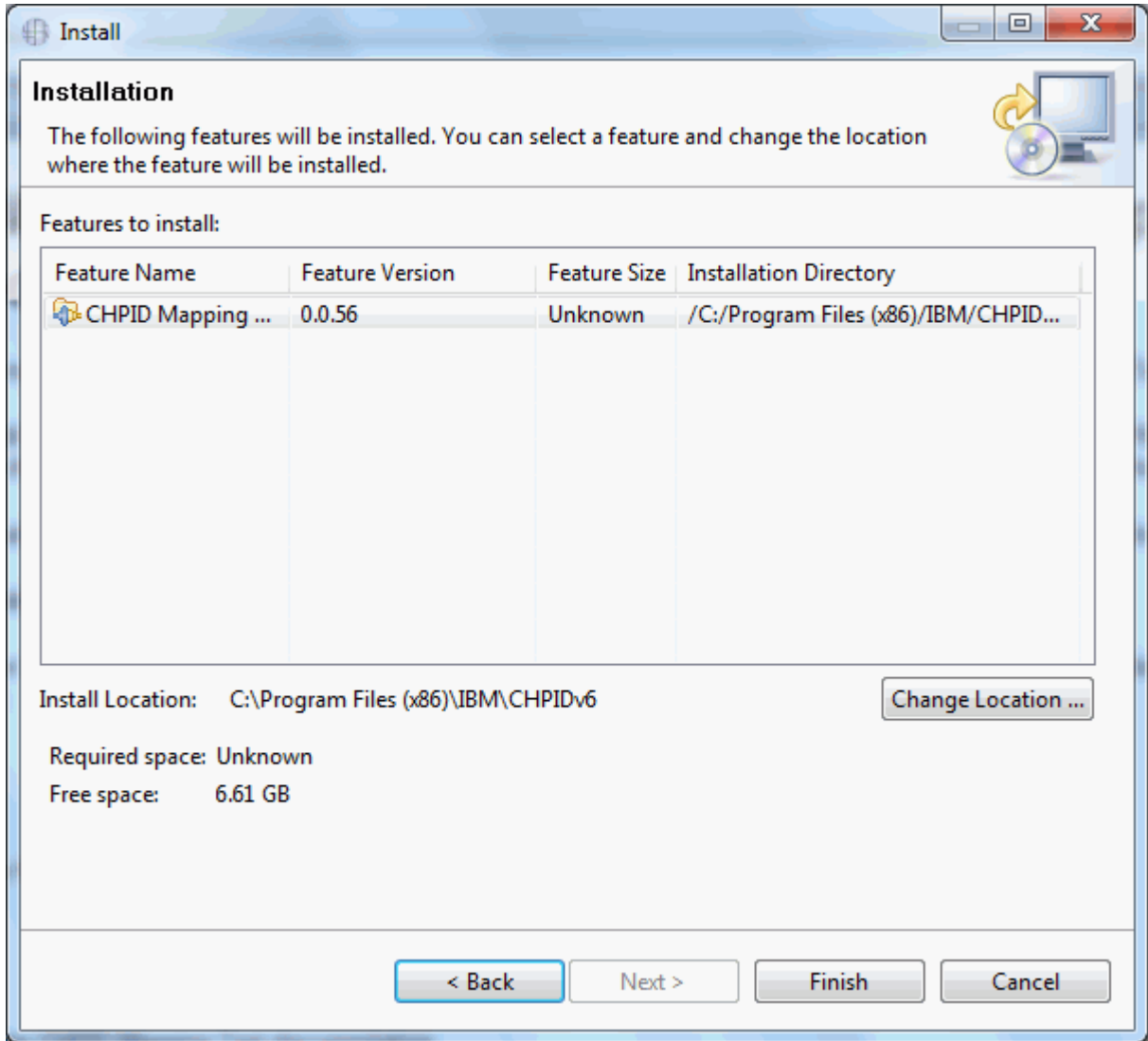


Figure 73. Install window - with installation information

- Click **Finish**. The Verification window opens. [Figure 74 on page 57](#) shows this.

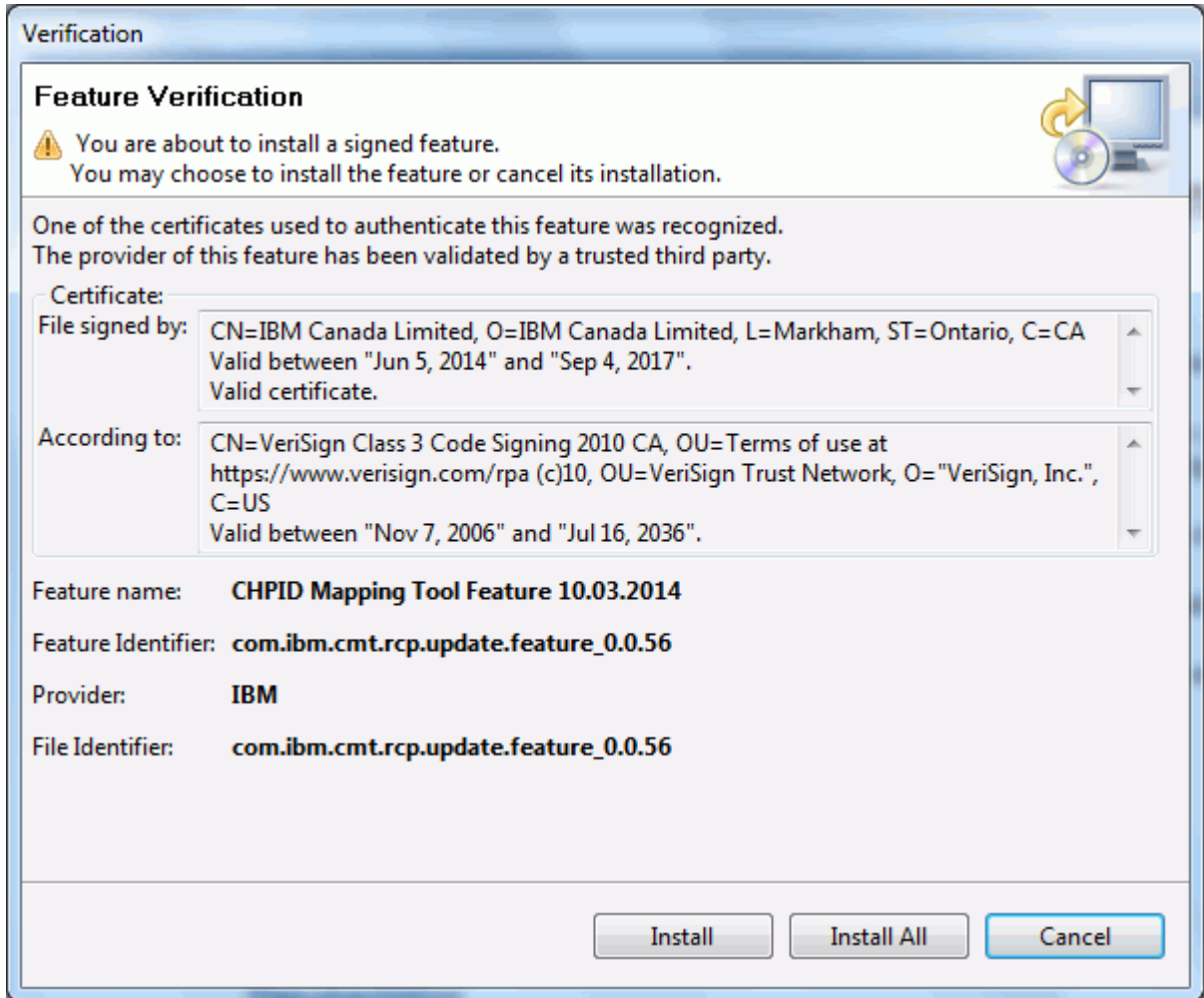


Figure 74. Verification window

8. Click **Install**. The Install/Update window opens. Figure 75 on page 57 shows this window.

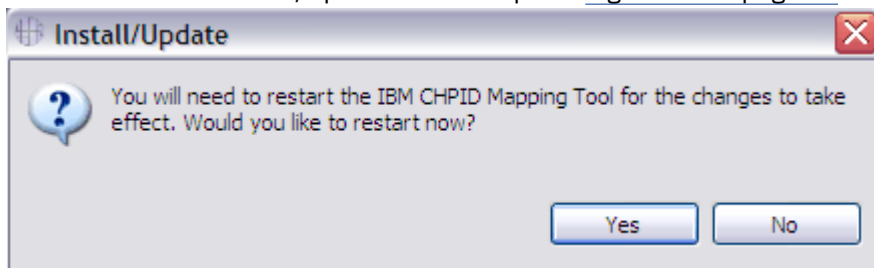


Figure 75. Install/Update window

9. Click **Yes**. The tool closes and reopens.  
 10. Click **OK** to clear the message. The tool reopens the CHPID Mapping Tool window.



---

## Chapter 6. Strategies and Guidelines for Assigning Priorities

In manual mapping, you manually assign CHPIDs to PCHIDs. By contrast, automatic mapping allows the CHPID Mapping Tool to map CHPIDs to PCHIDs, and the tool tries to find the optimal mapping for each CHPID. A key step before performing automatic mapping is assigning priorities. One reason for assigning CU priorities is that your project has two (or more) control units that need to be processed at the same time.

The task of setting CU priorities consists of assigning priority numbers to control units. Setting CU priorities Priority numbers represent **the order** in which the tool maps the control units. This order is a key requirement of mapping for high availability.

The relationship between priority numbers and their priority (mapping order) is: The lower the priority number, the higher the priority. For example, a control unit with a priority number of 0001 is mapped before one with a priority number of 1000. The priority numbers correspond to the order of processing. A lower priority number indicates a higher level of importance.

This section provides strategies and guidelines to help you assign priority numbers effectively for effective automatic mapping.

---

### Availability algorithm for automatic mapping

Automatic mapping configures paths to multiple path control units according to the following order of precedence (highest to lowest):

- Book
- MBA or Fanout
- Domain
- I/O card.

The tool does not consider logical partitions (that is, which CHPIDs are assigned to what LPs), switch configurations, or control unit availability characteristics. For these reasons, the mapping results might not be acceptable for all users. While helpful for many, the tool cannot replace an expert system programmer.

---

### Use incremental numbering

The first time you specify the priorities of control units, use incremental numbering for priorities rather than sequential numbering by ones. For example, use increments of five (0005, 0010, 0015, and so on) or 10 (0010, 0020, 0030, and so on). A single pass through the tool is unlikely to produce the mapping you want. Using incremental numbering allows you to change the priorities of some control units without having to redo others.

For example, suppose you start with priority 0001 and assign priorities by ones from 0001 to 0100. Then you run the tool and discover you need to change the control unit with priority 0025 to priority 0009. You would have to go back and redo all control units from 0009 to 0100. With incremental numbering, you could reassign only the control unit with the problem to an unassigned priority. You would not have to redo the priorities of other control units.

## Examine critical devices and paths and the HCD definitions

To prioritize at the control unit level, first look at the paths to critical devices, and then identify how these devices are defined to HCD. This information includes the relationship to control units and ultimately to channel paths. For example, Figure 76 on page 60 shows IOCP source input for a string of devices where each individual path is defined with a single control unit statement:

```
CNTLUNIT CUNUMBR=1000,PATH=(CSS(0),A3),UNITADD=((00,256)),LINK=(52), *
UNIT=3990
CNTLUNIT CUNUMBR=1001,PATH=(CSS(0),B4),UNITADD=((00,256)),LINK=(53), *
UNIT=3990
CNTLUNIT CUNUMBR=1002,PATH=(CSS(0),B7),UNITADD=((00,256)),LINK=(F1), *
UNIT=3990
CNTLUNIT CUNUMBR=1003,PATH=(CSS(0),C0),UNITADD=((00,256)),LINK=(F3), *
UNIT=3990
CNTLUNIT CUNUMBR=1004,PATH=(CSS(0),C4),UNITADD=((00,256)),LINK=(52), *
UNIT=3990
CNTLUNIT CUNUMBR=1005,PATH=(CSS(0),C7),UNITADD=((00,256)),LINK=(53), *
UNIT=3990
CNTLUNIT CUNUMBR=1006,PATH=(CSS(0),CC),UNITADD=((00,256)),LINK=(F1), *
UNIT=3990
CNTLUNIT CUNUMBR=1007,PATH=(CSS(0),DE),UNITADD=((00,256)),LINK=(F3), *
UNIT=3990

IODEVICE ADDRESS=(1000,256),
CUNUMBR=(1000,1001,1002,1003,1004,1005,1006,1007), *
STADET=Y,UNIT=3990
```

Figure 76. IOCP Code i -- Each Individual path is defined with a single control unit statement

In this example, there are eight paths to the string of DASD in the address range 1000. Optimally, the eight paths would be spread across availability boundaries to ensure high availability if one or more paths to the devices fails. Therefore, define control units 1000, 1001, 1002, 1003, 1004, 1005, 1006, and 1007 with the same priority. (This assigns them to the same priority group.) Doing so enables the mapping tool to understand the relationships between the control units. Defining the control units with the same priority ensures that all eight paths are mapped for availability.

## Examine relationships across different control units

Although some control units and their attached devices are physically independent, there might be a critical relationship in terms of availability. An example is the use of 3174 control units for master and alternate console support. Consider the following example:

```
CNTLUNIT CUNUMBR=1D40,PATH=(CSS(0),44),
UNITADD=((00,016)),UNIT=3174
CNTLUNIT CUNUMBR=2D40,PATH=(CSS(0),45),
UNITADD=((00,016)),UNIT=3174
```

At first glance, the control units might appear to be unrelated. However, you might know that 1D40 is the control unit for the master consoles for a particular LPAR and that 2D40 is the control unit for the alternate consoles of that LPAR. Because availability would be key for both of these control units, put them in the same priority group.

You continue this analysis across different control unit types, such as 3745s, tape units, CTCs, and so on. Typically, the customer is aware of these relationships and can plan accordingly.

## CHPIDs not connected to control units

Figure 77 on page 61 shows the CU Priorities pane in the CU Priorities view. Look at the CU Number column. At the end of the list, the CHPID Mapping Tool displays all CHPIDs defined in the IOCP input that are **not** connected to control units. All coupling CHPIDs in this list are preceded with an "S". All non-

coupling CHPIDs are preceded with a "P". In the example, [Figure 77 on page 61](#) shows an "S" before the CU Number.

CU Number	J Type	Priority	CSS	Comments
8000	2105	---	0	
FFFD	CFP	---	0	
FFFE	CFP	---	0	
FFFE	CFP	---	1	
P180	FC	---	1	
S0F4	CIB	---	0	
S1F4	CIB	---	1	

Figure 77. "S" before CU number of a coupling CHPID

Reasons to review the list of unconnected CHPIDs include the following:

- You might have forgotten to add a CHPID to a control unit and need to update the IOCP source before continuing in the tool.
- The unconnected CHPIDs might be extra channels you are ordering in anticipation of new control units
- The unconnected CHPIDs might be coupling links that are being used in coupling facility (CF) images. (These do not require control units.)

If unconnected CHPIDS are extra CHPIDS for anticipated new control units, you might want to group these CHPIDs with a common priority. Such a grouping allows automatic mapping to pick PCHIDs that afford your new control unit good availability.

If they are coupling links used by a CF image, group these links.

Use a common priority to group each set of CHPIDs going to a different CPC. For example, suppose the CF image has four links (CHPIDs 40, 41, 42, 43) and that 40 and 41 go to one CPC, while 42 and 43 go to a different CPC. In this case, give CHPIDs 40 and 41 one priority and CHPIDs 42 and 43 a different priority. The concept is the same regardless of the number of connecting CPCs or the number of links to each CPC.

**Note:** Different sysplexes are likely to have different levels of importance. You should consider this when assigning the priorities.

## Set priorities for daisy-chained control units

In many cases, especially when ESCON or FICON directors are used, multiple control units are daisy-chained off the same channels either logically or physically. In this case, you do not need to prioritize all control units. (The reason is you are simply trying to map the channels for the control units. If you map the first one, the others are automatically mapped for availability. Therefore, assigning a priority for one of the control units (or groups of control units) automatically brings the others along without your assigning them priorities.)

If some daisy-chained control units have different numbers of CHPIDS going to them, separate the control units into different groups. Doing so is advantageous from an availability perspective, even though the same CHPIDs are being used. Assign the control units with fewer common channels as a higher priority (lower priority number) than control units with larger numbers of common channels.

For example, suppose control units CU1 and CU2 are daisy chained. CU1 has CHPIDs 1 and 2, while CU2 has CHPIDs 1,2,3, and 4. Assign CU1 to a priority group that is processed before the group containing CU2 (even though all CHPIDs going to CU1 also go to CU2).

**Note:** When you enter a priority for a control unit and other control units use the same CHPIDs, those entries are unavailable to indicate possible daisy chaining.

## **A limit applies to control units in a priority group**

---

You can place a limited number of control units in the same priority group. The number of associated channels determines the limit. The exact number of the limit depends on the types of channels. The limit is a fixed value independent of the configuration. The CHPID Mapping Tool informs you if the number of control units in the same priority group exceeds the limit.

The number of CHPIDS in a single group that can be spread across cards for availability has a physical limit. . For example, for an IOCP with 256 ESCON channels, it might seem easiest to put all control units in a single group. However, doing so is not feasible because the machine would need 256 separate ESCON cards.



---

## Chapter 7. Assigning priorities, automatic mapping, and processing intersections

The CHPID Tool provides two methods for mapping CHPIDs to PCHIDs:

### Manual mapping

You manually assign CHPIDs to PCHIDs.

### Automatic mapping

You optionally assign CU priorities and allow the tool to automatically assign CHPIDs to PCHIDs for maximum availability.

To get the maximum benefit from the CHPID Mapping Tool, you are recommended to use automatic mapping whenever possible. However, certain situations require you to perform manual mapping before you can perform automatic mapping. For example, the CHPID Mapping Tool cannot automatically assign to a PCHID any CHPID with an IOCP type of CIB or CS5. If the AID assignment in the IOCP input file is not valid, you can reset it during Hardware Resolution (see “Performing hardware resolution to remove PCHIDs” on page 35). Then to enable **Automatic Mapping**, you use manual mapping to reassign those CHPIDs to PCHIDs. You may also require manual mapping for CL5, HYL, ROCE, ROC2, FC and FCP IOCP types. See “Manually assigning CHPIDS of type CL5, HYL, ROCE, and ROC2” on page 98 and “Manually assigning CHPIDS of type FC and FCP” on page 98.

You might also want to use manual mapping in the following circumstances:

- If you have specific requirements about how CHPIDs should be laid out on the machine.
- To make minor mapping adjustments.
- To eliminate intersections after you use **Process Intersections**. (See “Resetting CHPIDs in manual mapping” on page 76.)

For details about performing manual mapping, see [Chapter 8, “Manual mapping,” on page 79](#).

To make **Automatic Mapping** available, you need to do the following:

1. If you have any CHPID with an IOCP type of CIB or CS5, use manual mapping to assign each such CHPID to a PCHID. (For manual mapping details, see [Chapter 8, “Manual mapping,” on page 79](#).)
2. If necessary, use manual mapping to assign any other unassigned CHPID to a PCHID.
3. Optionally assign priorities.

---

### The CU Priorities view

This button displays the CU Priorities view. This view has four panes in the IBM CHPID Mapping Tool window. [Figure 78 on page 64](#) shows this view..

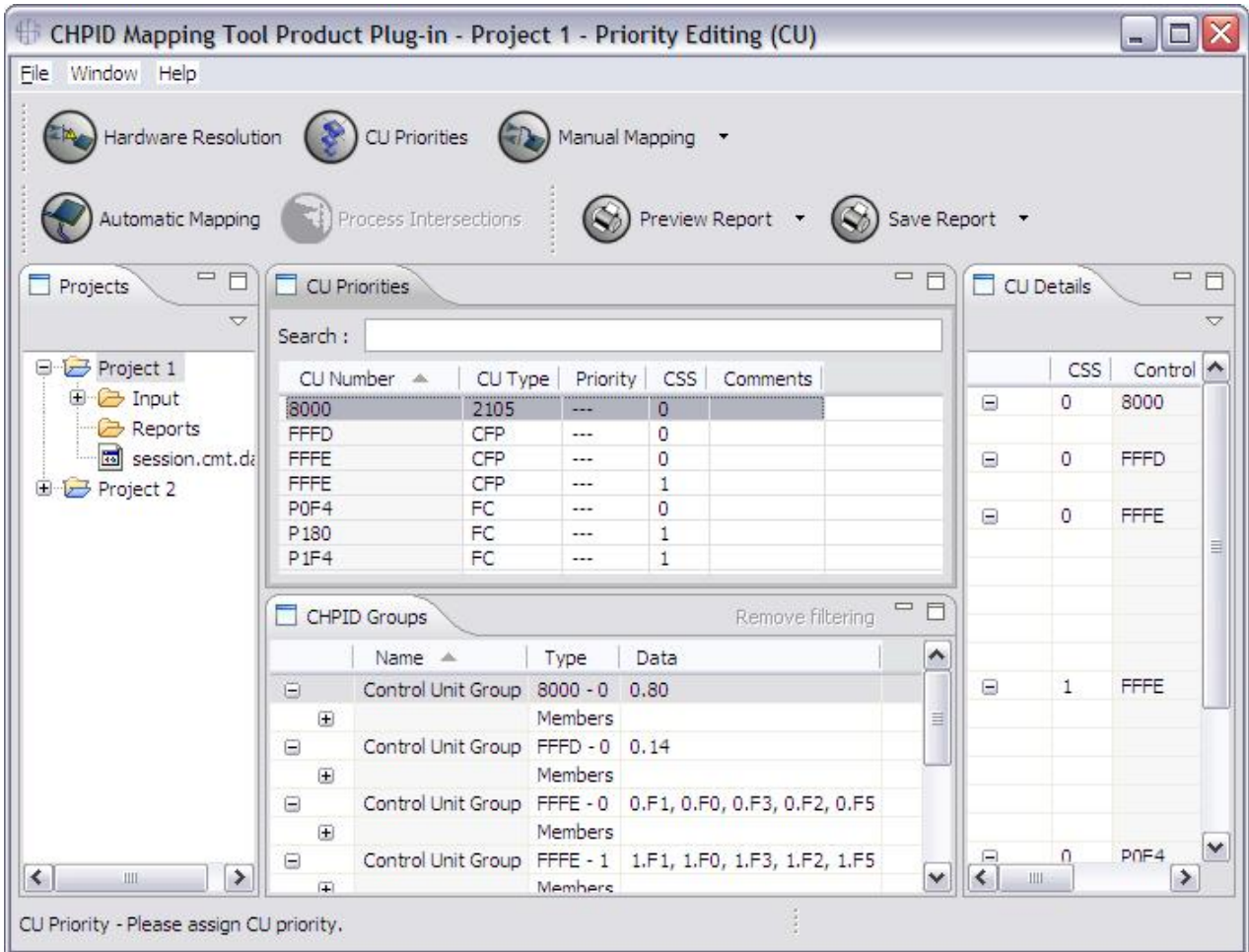


Figure 78. IBM CHPID Mapping Tool window - CU Priorities view

The view includes:

### Projects

By default, this pane is on the left. (It is on the top left if there are two panes on the left.) See [“The Projects pane”](#) on page 15 for a detailed description.)

### CU Priorities

By default, this pane is the center pane on the top. It is the pane where you perform the work of assigning priorities. This pane shows the control unit numbers and types.

### CHPID Groups

By default, this pane is the center pane on the bottom. This pane shows the members (CHPIDs) of the control units and any intersections.

### CU Details

By default, this pane is on the right. This pane shows the members (CHPIDs) of the control units.

## Optionally assigning priorities

You might decide to assign priorities in certain situations. For example, you might assign priorities if:

- You have two (or more) control units that you want to process at the same time
- You want to prioritize control units.

Perform the following steps to assign priorities:

1. Click **CU Priorities** to open the CU Priorities view if it is not already open. Figure 79 on page 65 shows the three panes in the CU Priorities pane view. The CU Priorities pane includes a Priorities column. Before you assign priorities, this column has " - " in each row.

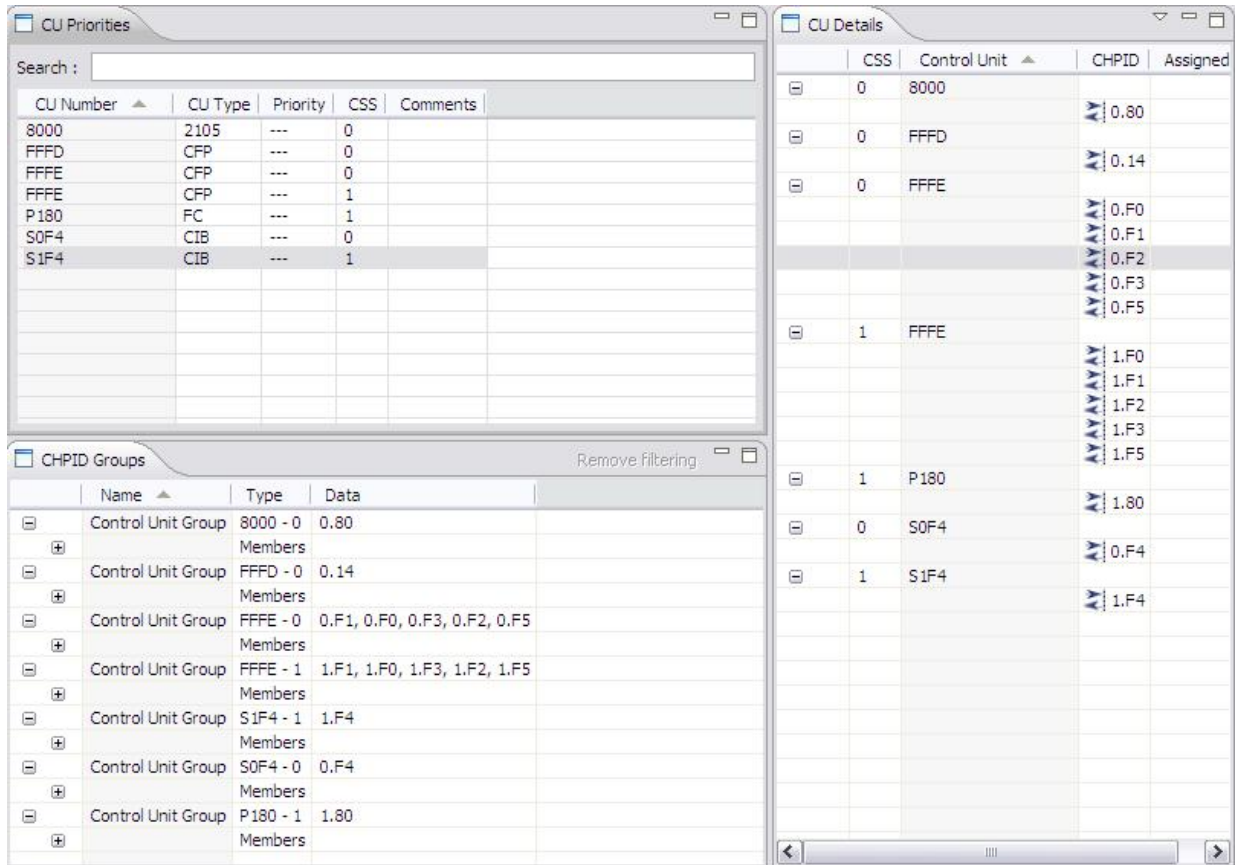


Figure 79. CU Priorities pane before assigning priorities

2. Perform this step for each row: Type a priority number for the CU in the Priority column. Figure 80 on page 66 shows the CU Priorities pane after you have assigned all priorities.

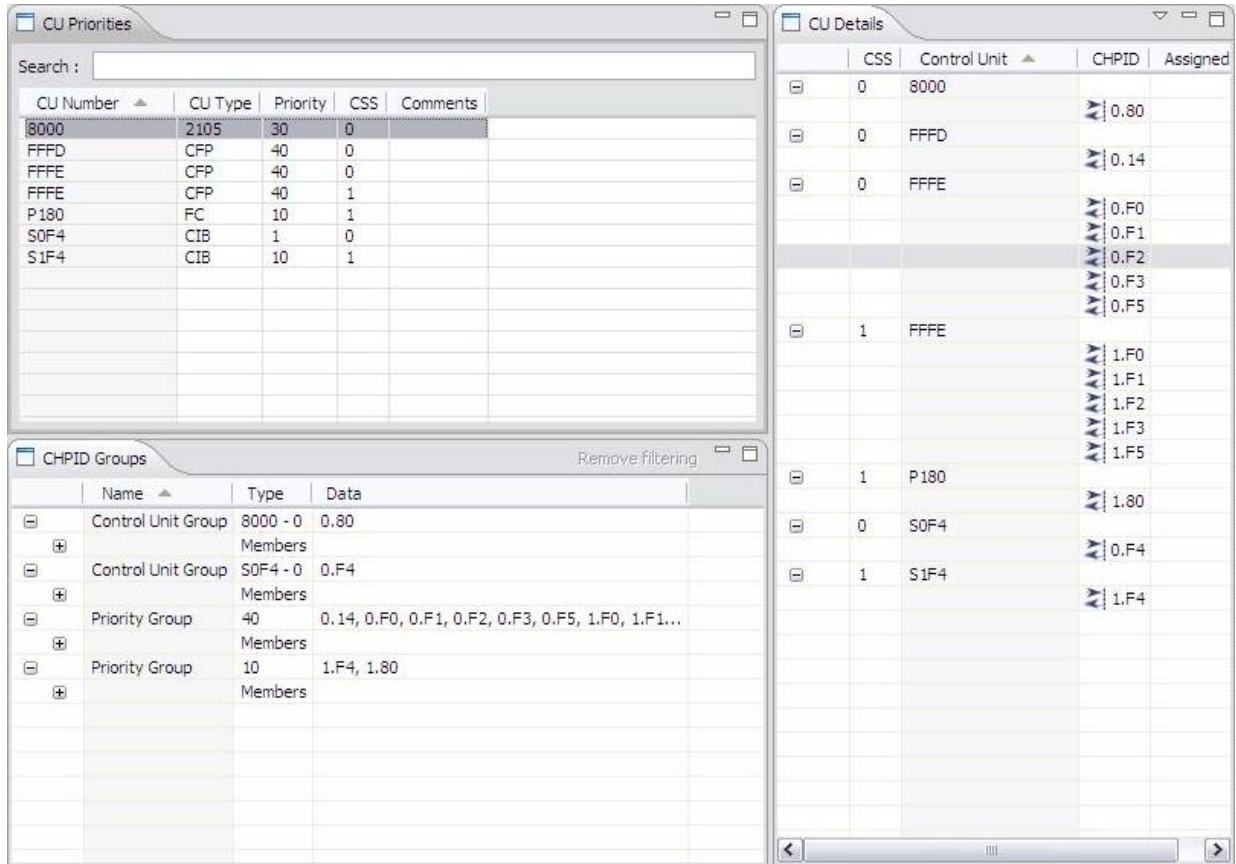


Figure 80. After assigning priorities

When you type in priorities, the CHPID Mapping Tool makes additional related changes in the CHPID Groups pane.

**Control Unit Group**

Before you assign priorities, Control Unit Groups are the only type of group in the CHPID Groups pane. After you assign priorities, this type of group is for control units not sharing the same priority with other control units. [Figure 80 on page 66](#) shows an example. In this example, in the CU Priorities pane:

- Control unit number 8000 is the only one with a priority of 30
- Control unit number is the only one with a priority of 1.

After you assign priorities, in the CHPID Groups pane, control unit numbers 8000 and S0F4 remain in Control Unit Groups.

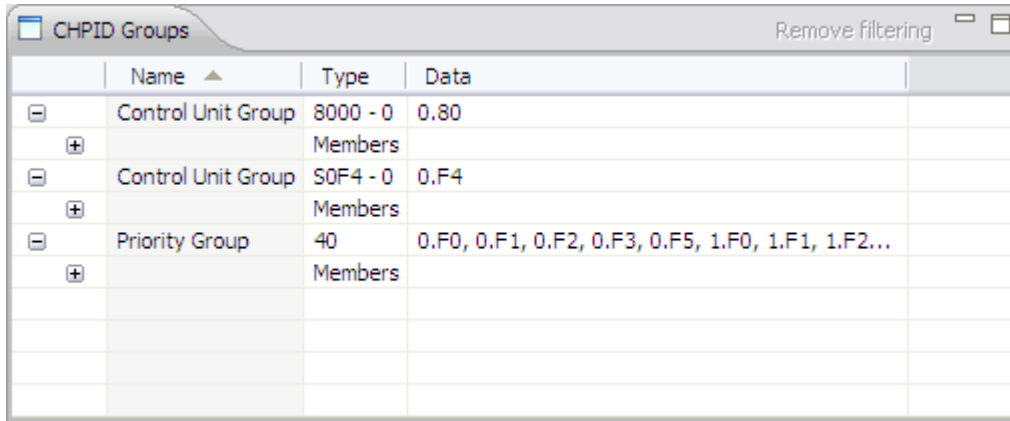
**Priority Group**

If you assign the same priority to multiple control units, the tool lists a Priority Group in the CHPID Groups pane. This type of group is for control units sharing the same priority. [Figure 80 on page 66](#) shows an example. In the CU Priorities pane, three control units have the same priority:

- FFFD
- FFFE (both CSS 1 and CSS 0).

In the CHPID Groups pane, these three control units are in a Priority Group.

[Figure 81 on page 67](#) shows the CHPID Groups pane as it appears after assigning priorities (in either the CU Priorities pane or the Manual Mapping pane). It has the two Control Unit Groups and a Priority Group.

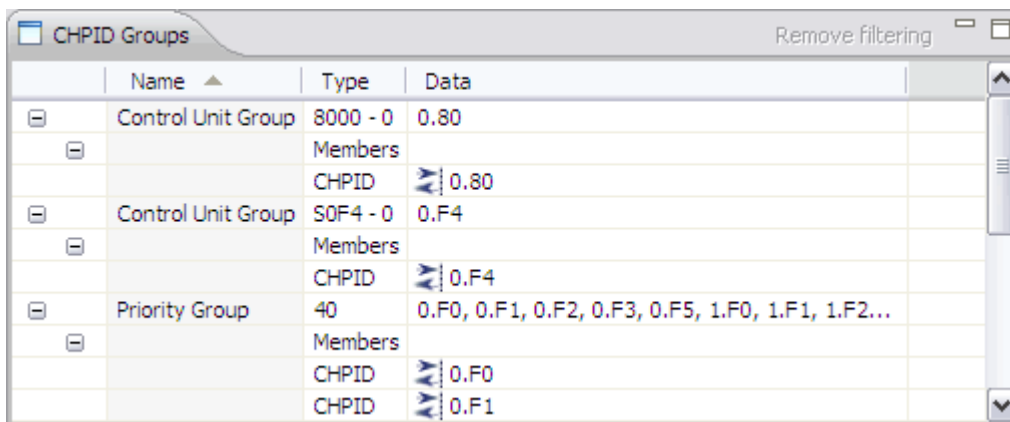


The screenshot shows a window titled "CHPID Groups" with a "Remove filtering" button in the top right. The main area contains a table with the following data:

	Name ▲	Type	Data
[-]	Control Unit Group	8000 - 0	0.80
[+]		Members	
[-]	Control Unit Group	50F4 - 0	0.F4
[+]		Members	
[-]	Priority Group	40	0.F0, 0.F1, 0.F2, 0.F3, 0.F5, 1.F0, 1.F1, 1.F2...
[+]		Members	

Figure 81. The CHPID Groups pane - with members not expanded

Clicking the bottom plus sign of each group (in the first column) expands the information and displays the members belonging to the group. Figure 82 on page 67 shows this expansion:



The screenshot shows the same "CHPID Groups" window, but now the members are expanded. The table data is as follows:

	Name ▲	Type	Data
[-]	Control Unit Group	8000 - 0	0.80
[-]		Members	
		CHPID	0.80
[-]	Control Unit Group	50F4 - 0	0.F4
[-]		Members	
		CHPID	0.F4
[-]	Priority Group	40	0.F0, 0.F1, 0.F2, 0.F3, 0.F5, 1.F0, 1.F1, 1.F2...
[-]		Members	
		CHPID	0.F0
		CHPID	0.F1

Figure 82. The CHPID Groups pane - with members expanded

3. Click **Manual Mapping**. This returns you to the Manual Mapping view.

Unless you have changed the default, the CHPID Mapping Tool displays the **Hardware > IO** format of the Manual Mapping view. Figure 83 on page 68 shows this format.

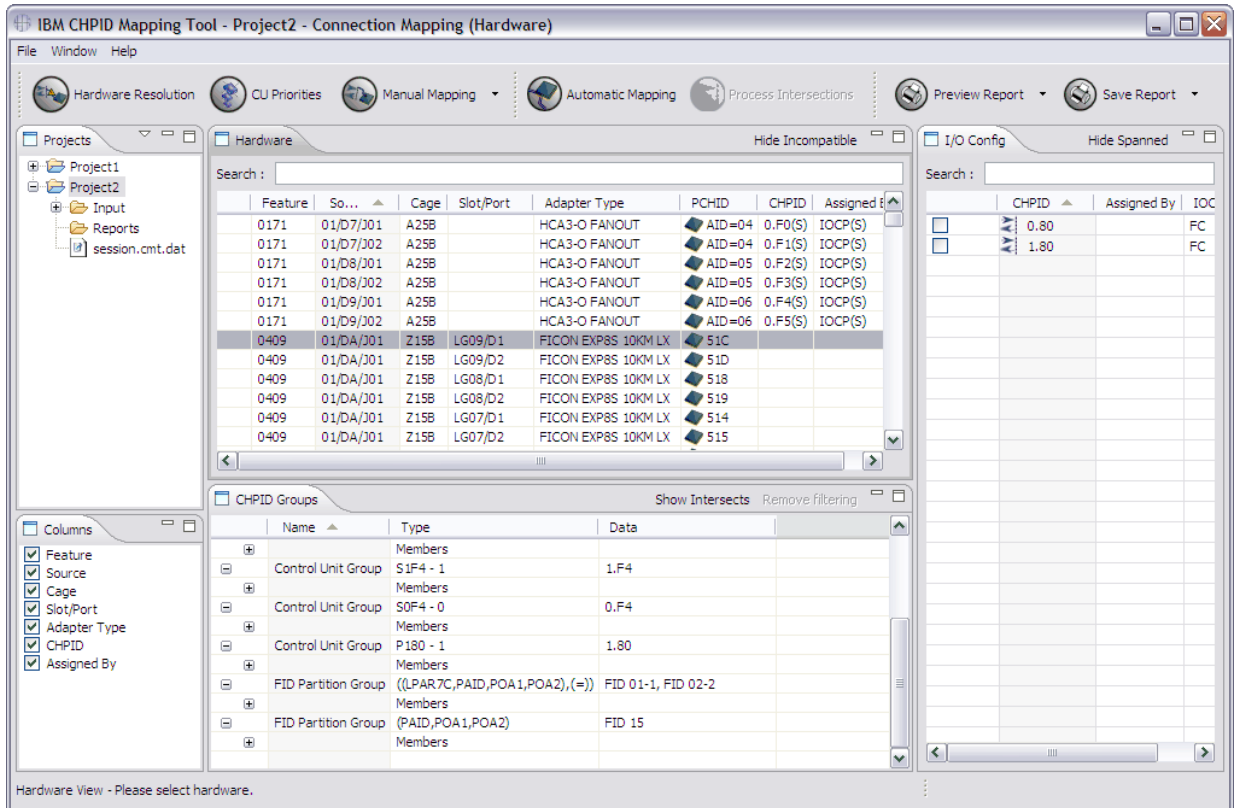


Figure 83. Manual Mapping view after assigning priorities - Hardware > I/O format

Alternately, you can click the down-arrow beside **Manual Mapping** and click **I/O > Hardware** to display the other format of the Manual Mapping view. Figure 84 on page 68 shows this format.

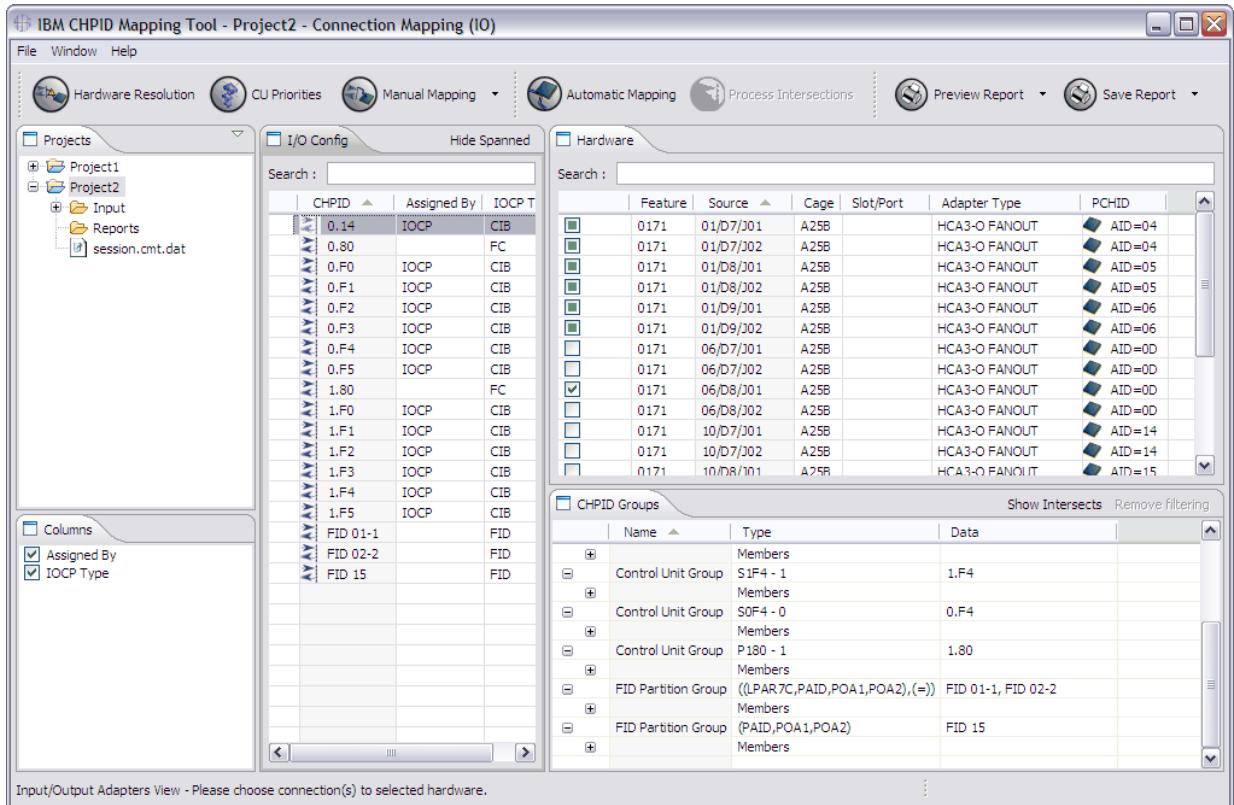


Figure 84. Manual Mapping view after assigning priorities -- I/O > Hardware format



(See [“Panels in the I/O -> Hardware format”](#) on page 86 for more information.)

For an IOCP type of CIB, the adapter type is IFB Link or HCA. For an IOCP type of CS5, the adapter type is PCIe. In the I/O > Hardware format of the Manual Mapping pane, you can view CIB and CS5 IOCP types; [Figure 84 on page 68](#) shows CIB IOCP types. In the Hardware > I/O format, you can view IFB Link, HCA, or PCIe adapter types; [Figure 83 on page 68](#) shows HCA adapter types.

For more information, see [“Manually assigning CHPIDS of type CIB and CS5”](#) on page 92.

## Performing Automatic Mapping



*Figure 85. Automatic Mapping*

Clicking **Automatic Mapping** performs two tasks:

- It performs the processing for automatic mapping
- It processes intersections.

**Note:** Although Automatic mapping includes processing intersections, there may be times when you want to process intersections without the overhead of performing automatic mapping. (See [“Optionally using Process Intersections”](#) on page 77 for such situations.)

Most of the processing that **Automatic Mapping** performs is not apparent to the user. The only part that the user sees when the tool asks the user to indicate which CHPID assignments to reset (and a progress bar window for mapping and processing intersections).

Perform the following steps for automatic mapping.

1. Click **Automatic Mapping**.

The Reset CHPID Assignments window opens. [Figure 86 on page 70](#) shows an example of the window with four choices. The fourth choice, is available only for an upgrade or an MES.

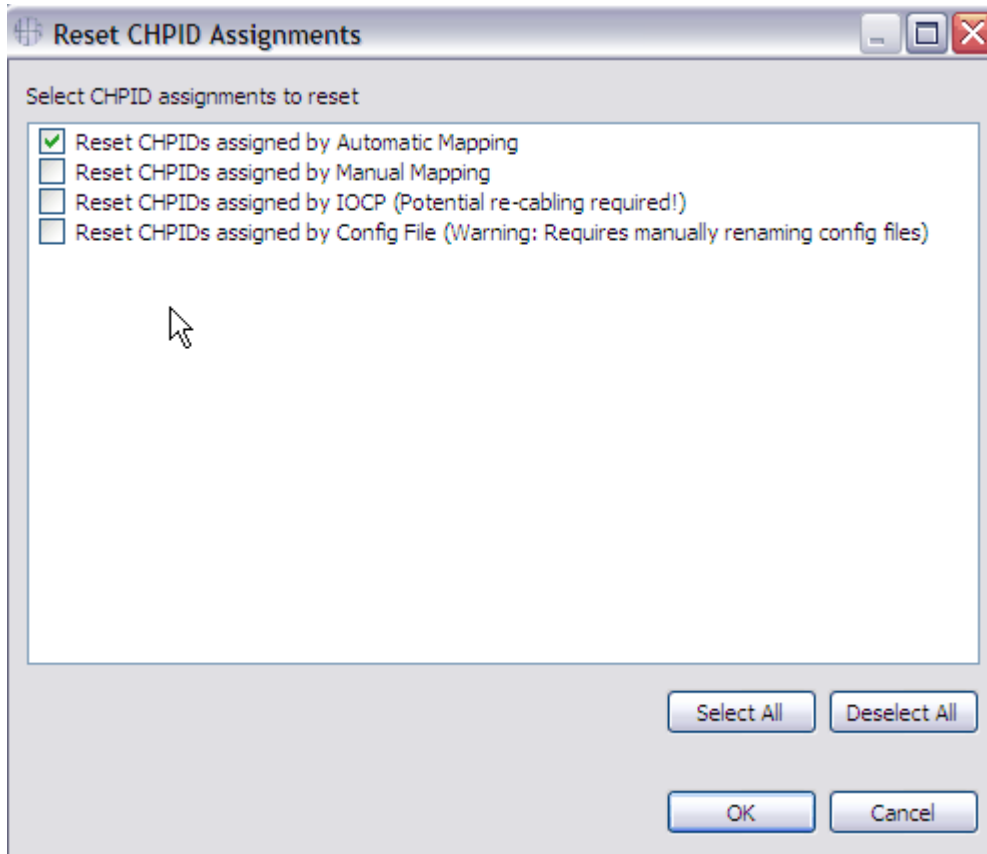


Figure 86. Reset CHPID Assignments window

2. Select the CHPIDs you want to reset.

You can select none, all, or any number of check boxes.

**Note:** None of the choices affects CIB or CS5 type CHPIDs associated with IFB Link, HCA, or PCIe channel types.

#### **Reset CHPIDs assigned by Automatic Mapping**

Resets all CHPIDs processed by previous automatic mapping in this session.

By default, this option is selected. (To select none of the options, clear this default selection or click **Deselect All**.)

#### **Reset CHPIDs assigned by Manual Mapping**

Resets CHPIDS for which manual mapping assigned PCHIDs.

#### **Reset CHPIDs assigned by IOCP**

Resets CHPIDS assigned in the IOCP input file.

Selecting this option may require recabling after automatic mapping. The following message is displayed (in red on the Reset CHPID Assignments window):

Resetting IOCP assignments may require recabling

#### **Reset CHPIDs assigned by CMT for config files**

Resets assignments the CHPID Mapping Tool made (for an upgrade or an MES). The tool resets the assignments only if the project's IOCP file includes CHPID Mapping Tool assignments for config files.

**Recommendation:** Even if **Reset CHPIDs assigned by CMT for config files** is available, you are recommended not to select it. Suppose you run automatic mapping and review the intersections, concluding that the configuration file assignments are causing unacceptable intersections. You are



then recommended to use manual mapping to reset only those configuration file assignments causing the unacceptable intersections.

3. Click **OK**.

After the tool completes processing, you can view any intersections in the CHPID Groups pane of Manual Mapping or CU Priorities view.

## Intersections

---

The next several sections provide the following information:

- Types of intersections
- Viewing information about intersections
- Possible strategies for eliminating intersections
- Manually running **Process Intersections**.

### Types of Intersections

The CHPID Mapping Tool flags several types of intersections. An intersection indicates a *possible* availability problem that you might need to consider and correct. The types of intersections are:

**D**

Assigned pchids are on the same daughter card.

**C**

Two or more assigned pchids use the same adapter card.

**S**

Greater than half the assigned pchids use the same InfiniBand or STI link.

**M**

All the assigned pchids are supported by the same MBA group.

**B**

Greater than half the assigned pchids are connected to the same book.

### Viewing information about intersections

After you run **Automatic Mapping** (or **Process Intersections** – see [“Optionally using Process Intersections”](#) on page 77) the tool displays information about intersections in the CHPID Groups pane. (This pane is present in the Manual Mapping view (both formats) and in the CU Priorities view.) [Figure 87](#) on page 72 shows an example in which the tool flags "C" or "Card" intersections. The tool displays a red "C" in the Type column and "Card" in the Data column.

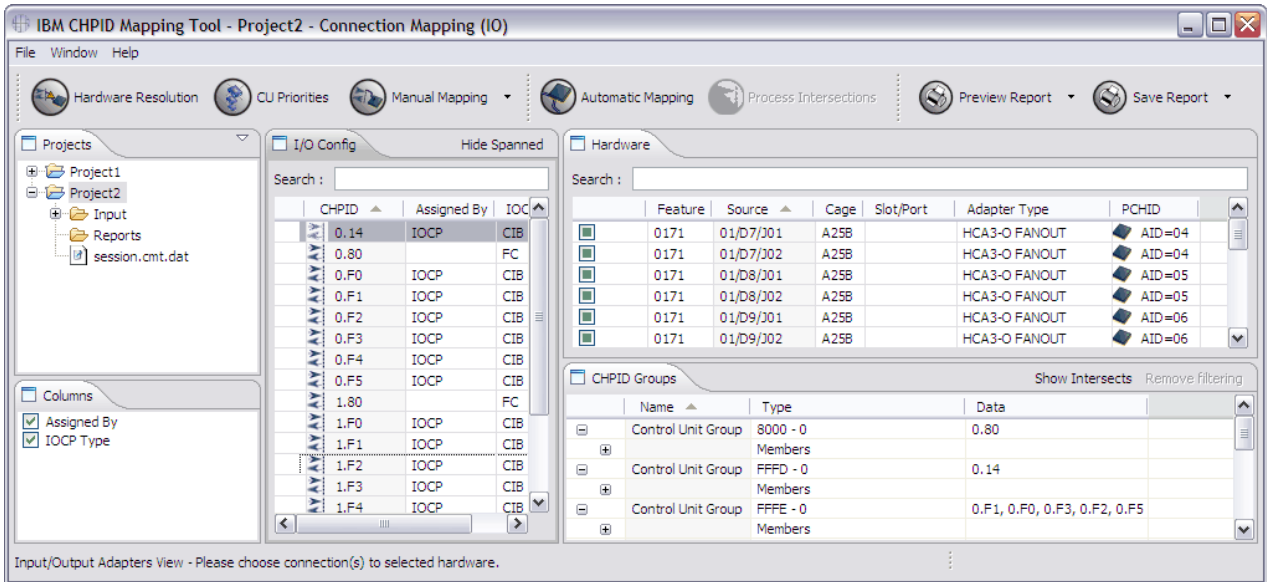


Figure 87. The CHPID Groups pane flags intersections

## Displaying only intersections

To display only the intersections in the CHPID Groups pane, click **Show Intersects**. To display all of the groups again, click **Show Intersects** again.

## Filtering information about intersections

Perform the following steps to filter information about intersections.

1. If you have not already done so, open the Manual Mapping view in the I/O Config > Hardware format. (Click the arrow beside **Manual Mapping**, and then click **I/O > Hardware**.) Figure 88 on page 72 shows format.

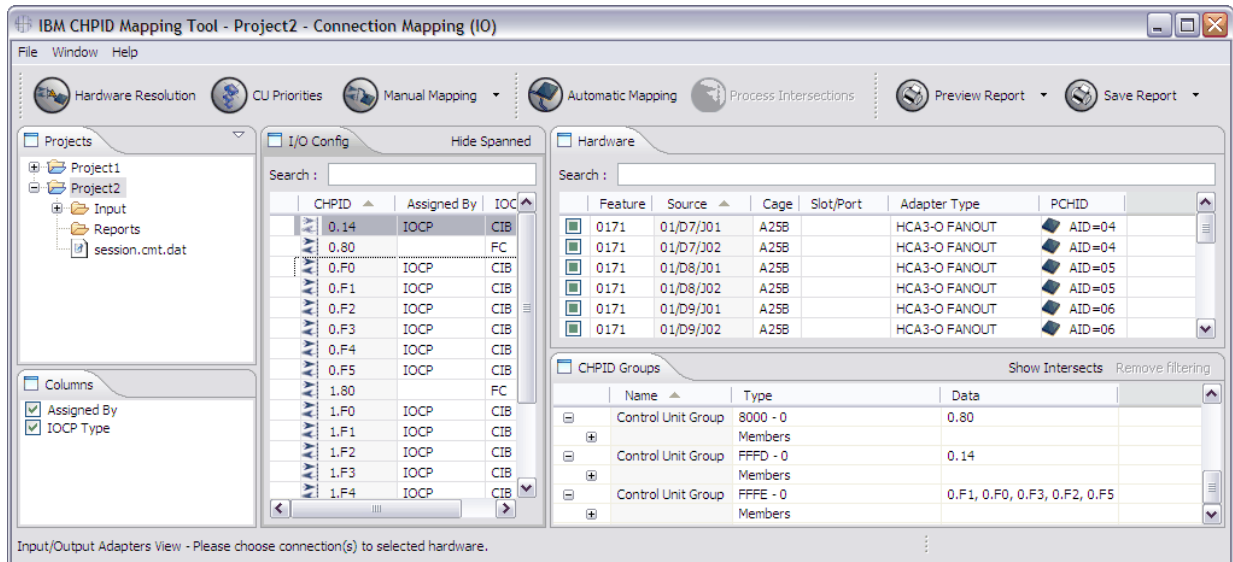


Figure 88. Manual Mapping view in I/O Config > Hardware format

2. In the CHPID Groups pane (at the bottom right by default), double click on Control Unit Group or on the intersection information (in Figure 88 on page 72, this is a big red C). This filters the information that the tool displays in the I/O Config pane. Figure 89 on page 73 shows this.

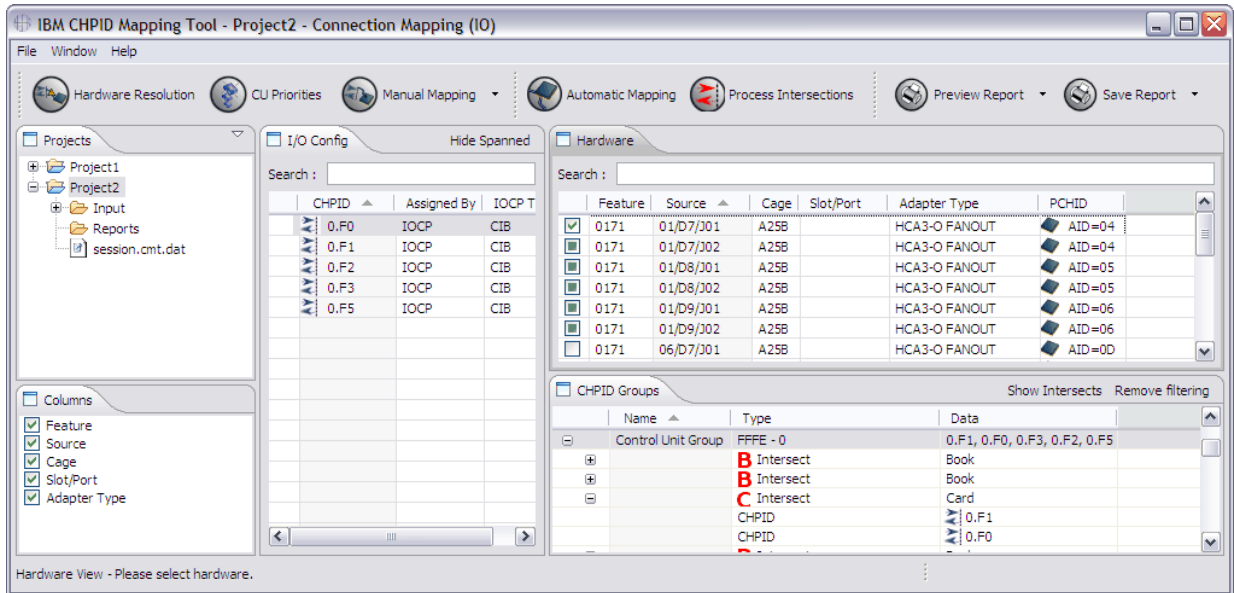


Figure 89. Filtered information in the I/O Config pane

- If you want to undo filtering, click **Remove Filtering** in the CHPID Groups pane. This returns the I/O Config pane to its previous state. Figure 90 on page 73 shows this.

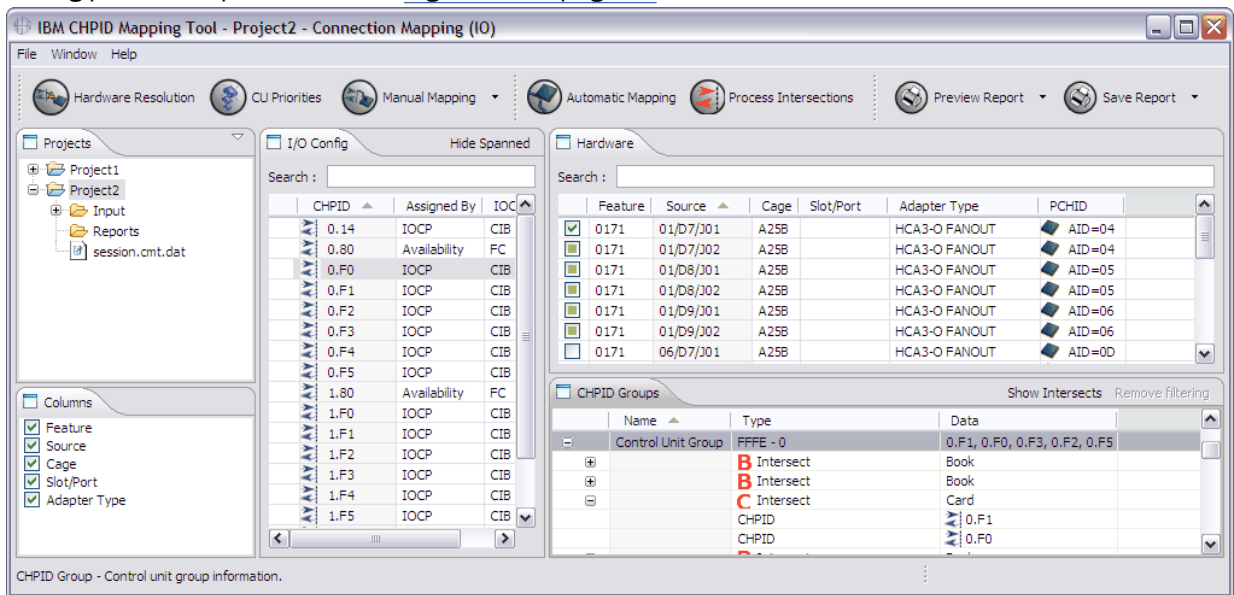


Figure 90. Removing filtering

## Resolving Intersections

You can try to resolve intersections by:

- Resetting priorities in the CU Priorities view
- Changing assignments in the Manual Mapping view
- Using a different IOCP file
- Adding hardware.

### Resetting priorities to resolve intersections

Perform the following steps to reset priorities:

- If you have not already done so, display the CU Priorities view by clicking **CU Priorities**. Figure 91 on page 74 shows the originally assigned priorities and four associated intersections.

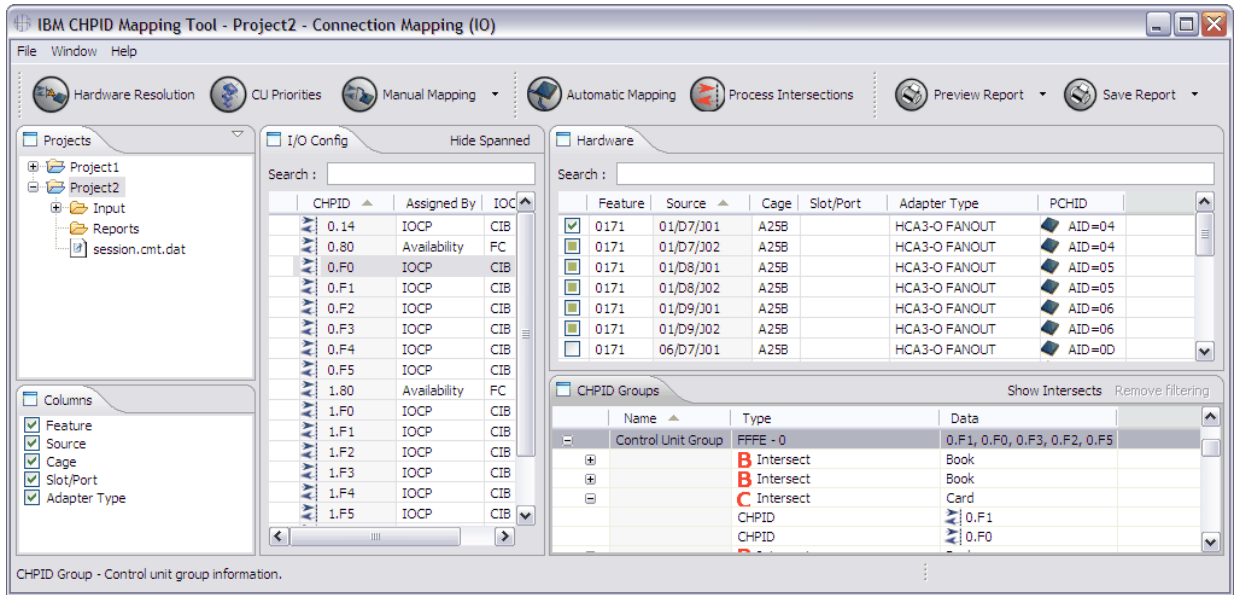


Figure 91. Original priorities and associated intersections

2. In the CU Priorities pane, change the priority of any control unit that has an intersection and has the same priority as another control unit. [Figure 92 on page 75](#) shows the updated priorities.

The image shows two overlapping windows from a software application. The top window, titled 'CU Priorities', contains a search bar and a table with columns for CU Number, CU Type, Priority, CSS, and Comments. The bottom window, titled 'CHPID Groups', contains a table with columns for Name, Type, and Data, and includes expandable rows for 'Control Unit Group' and 'Priority Group'.

CU Number	CU Type	Priority	CSS	Comments
8000	2105	30	0	
FFFD	CFP	50	0	
FFFE	CFP	40	0	
FFFE	CFP	10	1	
P180	FC	10	1	
S0F4	CIB	1	0	
S1F4	CIB	10	1	

Name	Type	Data
Control Unit Group	S0F4 - 0	0.F4
+	Members	
Control Unit Group	8000 - 0	0.80
+	Members	
Control Unit Group	FFFD - 0	0.14
+	Members	
Control Unit Group	FFFE - 0	0.F1, 0.F0, 0.F3, 0.F2, 0.F5
+	Members	
Priority Group	10	1.F0, 1.F1, 1.F2, 1.F3, 1.F5, 1.80, 1.F4
+	Members	

Figure 92. Updated priorities

3. Click **Automatic Mapping** or **Process Intersections**.

**Note:** (As previously noted, **Automatic Mapping** includes processing intersections. However there may be times when you want to process intersections without the overhead of performing automatic mapping. See [“Optionally using Process Intersections”](#) on page 77 for more information.)

Figure 93 on page 76 shows only two "C" intersections (after changing a priority) rather than the original four.

The screenshot shows two windows from the CHPID Mapping Tool. The top window, titled 'CU Priorities', contains a search bar and a table with the following data:

CU Number	CU Type	Priority	CSS	Comments
8000	2105	30	0	
FFFD	CFP	50	0	
FFFE	CFP	40	0	
FFFE	CFP	10	1	
P180	FC	10	1	
S0F4	CIB	1	0	
S1F4	CIB	10	1	

The bottom window, titled 'CHPID Groups', shows a list of groups with expandable details. The 'Intersect Card' group is expanded, showing the following data:

Name	Type	Data
Control Unit Group	S0F4 - 0	0.F4
+	Members	
Control Unit Group	8000 - 0	0.80
+	Members	
Control Unit Group	FFFD - 0	0.14
+	Members	
Control Unit Group	FFFE - 0	0.F1, 0.F0, 0.F3, 0.F2, 0.F5
Intersect Card		
CHPID		0.F1
CHPID		0.F2
+	Members	
Priority Group	10	1.F0, 1.F1, 1.F2, 1.F3, 1.F5, 1.80, 1.F4

Figure 93. Intersections reduced

- Use manual mapping to remap CHPIDs to PCHIDs to fix intersections:

### Resetting CHPIDs in manual mapping

Perform the following steps to reset CHPIDS using manual mapping:

1. If you have not already done so, open the Manual Mapping view in the I/O Config > Hardware format. [Figure 94 on page 77](#) shows this.

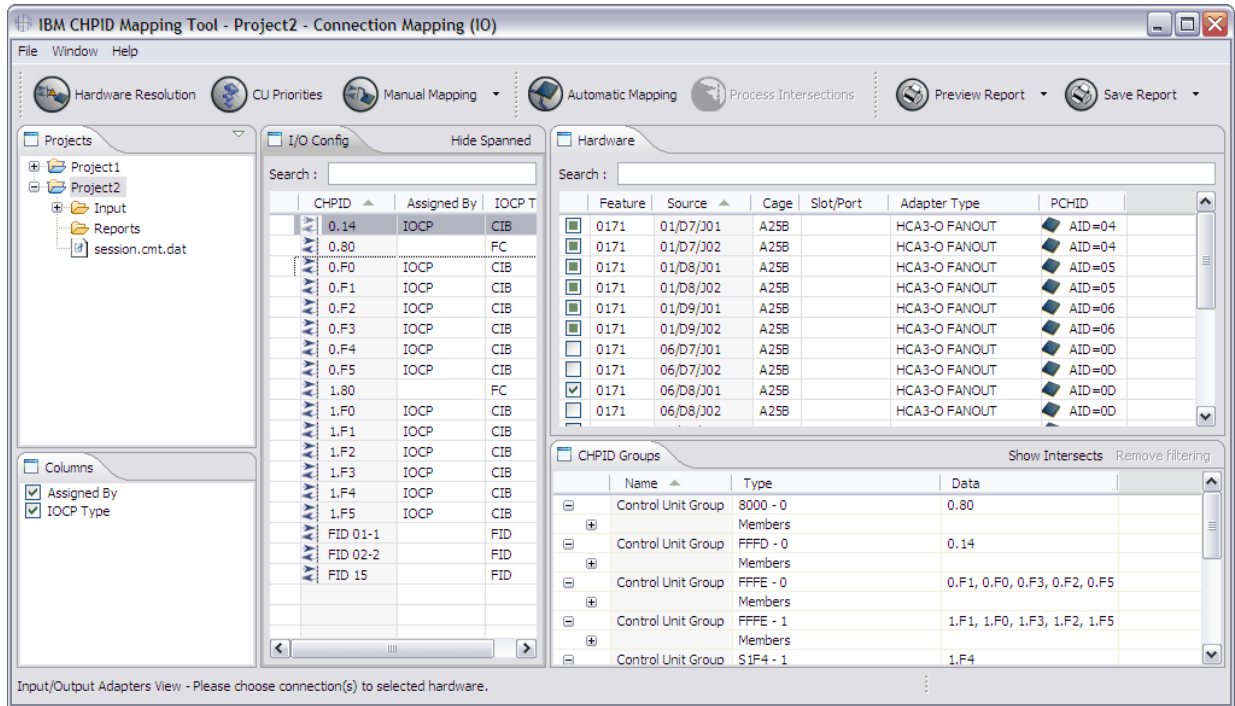


Figure 94. Manual Mapping view in I/O Config > Hardware format

**Note:** The CHPID Groups pane displays any intersections. This pane is present in the CU Priorities view and in both formats of the Manual Mapping view.

2. Optionally, filter groups; see “Filtering information about intersections” on page 72 for details.
3. See “Undoing a manual mapping assignment” on page 91 and “Performing manual mapping” on page 87 for information about remapping CHPIDs in the Manual Mapping view.
4. Click **Automatic Mapping** or **Process Intersections** (see “Optionally using Process Intersections” on page 77) to see if the tool still reports Intersections.

## Optionally using Process Intersections

**Automatic Mapping** performs the processing for automatic mapping and also for processing intersections. It also makes available **Process Intersections** control. There are only a few cases where you would want to run **Process Intersections**:

- If the IOCP file assigned all the CHPIDs, you can skip Automatic Mapping and go directly to checking for intersections.
- There may be situations for which you want to process intersections without the overhead of automatic mapping.

For example, if you run automatic mapping and there are intersections, you might use **Manual Mapping** to reset some CHPID assignments. To avoid the overhead of automatic mapping, you can click **Process Intersections** to see if your manual changes fixed the intersections.

If the tool reports intersections, see “Resolving Intersections” on page 73 for help.





## Chapter 8. Manual mapping

Few users would want to use manual mapping exclusively to map CHPIDs to PCHIDs. To use only manual mapping, you would need to thoroughly evaluate the allocation of devices to channels and you would need an in-depth knowledge of the availability characteristics of the machine structure. Therefore, most users prefer to use automatic mapping. (For details about automatic mapping, see [Chapter 7, “Assigning priorities, automatic mapping, and processing intersections,”](#) on page 63.)

However, certain situations require you to perform manual mapping before you can perform automatic mapping:

- The CHPID Mapping Tool cannot automatically assign CHPIDs of type CIB or CS5. If the AID assignment in the IOCP file is not valid, you can reset it during Hardware Resolution (see [“Performing hardware resolution to remove PCHIDs”](#) on page 35). Then to enable **Automatic Mapping**, use Manual Mapping to reassign those CHPIDs.
- The CHPID Mapping Tool may not automatically assign all CHPIDs of IOCP type CL5, HYL, ROCE, ROC2, FC and FCP. See [“Manually assigning CHPIDS of type CL5, HYL, ROCE, and ROC2”](#) on page 98 and [“Manually assigning CHPIDS of type FC and FCP”](#) on page 98
- You might also prefer to use manual mapping:
  - If you have specific requirements about how CHPIDs should be laid out on the machine.
  - To make minor mapping adjustments.
  - To eliminate intersections after you use **Process Intersections**. (For details, see [“Resetting CHPIDs in manual mapping”](#) on page 76.)

This chapter provides general information about the Manual Mapping view and the steps to perform manual mapping. See [“Manually assigning CHPIDS of type CIB and CS5”](#) on page 92 for information about using manual mapping to assign CHPIDs of IOCP type CIB and CS5.

### The Manual Mapping view

After hardware resolution is complete, there are no red-circled Xs in either the Hardware Resolution or Channel Type Summary panes of the Hardware Resolution view. **Manual Mapping** then becomes available. [Figure 95 on page 79](#) shows **Manual Mapping** available in the bar of buttons in the top of the tool.

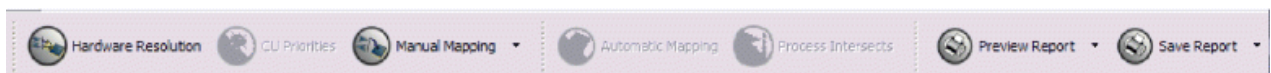


Figure 95. Manual Mapping available

You can either click **Manual Mapping** (by default the third button from the left) or click the arrow beside **Manual Mapping**. Clicking the arrow displays two choices, which represent two different workflow formats. [Figure 96 on page 79](#) shows these choices.

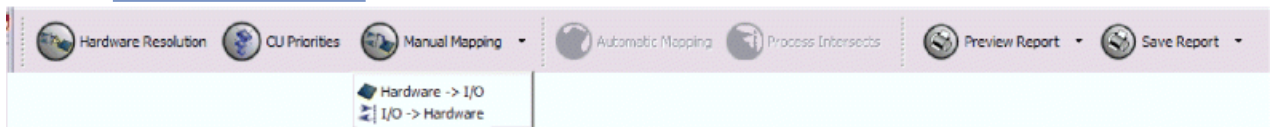


Figure 96. Manual Mapping button in group

The Hardware ->I/O format conceptualizes the workflow from the hardware point of view. After you select a hardware port, the tool filters the list of available CHPIDs based on your choice; then and you select the CHPID or CHPIDs. Alternately, the I/O -> Hardware format allows you to select a particular CHPID; the tool filters the hardware, and you select the location to assign to the CHPID.

Clicking **Manual Mapping** has the same effect as clicking **Manual Mapping > Hardware -> I/O**.

## Panes in Hardware -> I/O format

Figure 97 on page 80 shows the Manual Mapping pane using **Hardware -> I/O** format.

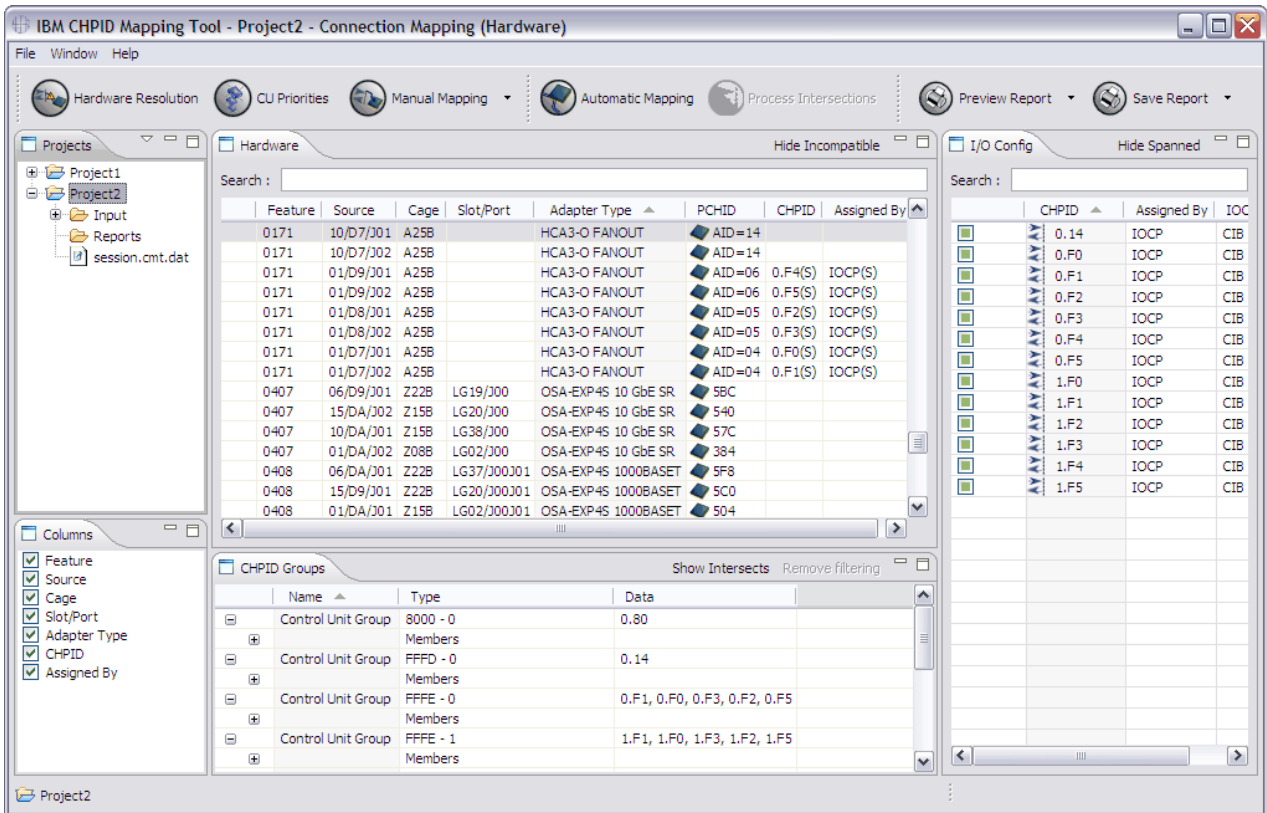


Figure 97. Manual Mapping view – Hardware -> I/O format

The **Hardware -> I/O** version contains five panes:

### Projects

See “The Projects pane” on page 15 for details about the Projects pane.

### Columns

This pane is the lower-left pane (by default). When you click in a pane with columns of information, the Columns pane lists the column headings. You can hide a column by clearing its check box; you can undo this change by selecting its check box again. Figure 98 on page 80 lists the columns in the Hardware pane (of the Manual Mapping view).

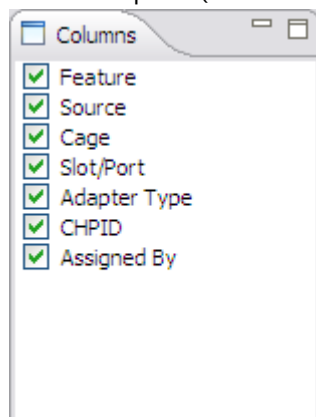


Figure 98. Columns pane showing available columns for Hardware pane

See “The Hardware Resolution pane ” on page 29 for descriptions of these columns.

If you have clicked to select a row in the I/O Config pane, the Column pane displays a list of the columns in the I/O Config pane. Figure 99 on page 81 shows this.

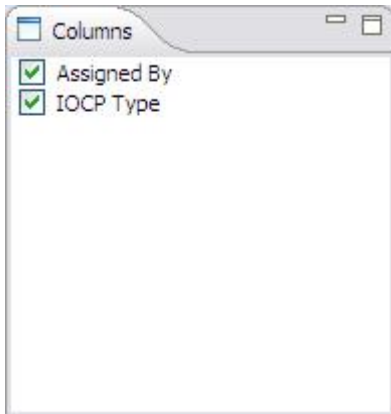


Figure 99. Columns pane showing available columns for I/O Config pane

**Note:** The Columns pane might be empty when you first open the Manual Mapping view. When you click in Hardware pane or I/O Config pane, the tool displays the appropriate list of the columns.

A check mark in a check box indicates that the particular column is displayed in the Hardware pane. To control the information that is displayed in the Hardware pane, you can select and clear the check boxes in the Columns pane.

### Hardware

The Hardware pane is, by default, positioned as the top middle pane. This pane shows the hardware ports available to accept assignments for CHPIDs. It consists of a table containing rows and columns of information you use to perform manual mapping. For details, see “The Hardware Resolution pane ” on page 29.

### CHPID Groups

Although the CHPID Groups pane is present in this view, the CU Priority function determines the contents of this pane; for more information, see “Optionally assigning priorities ” on page 64.

Figure 100 on page 81 shows the CHPID Groups pane.

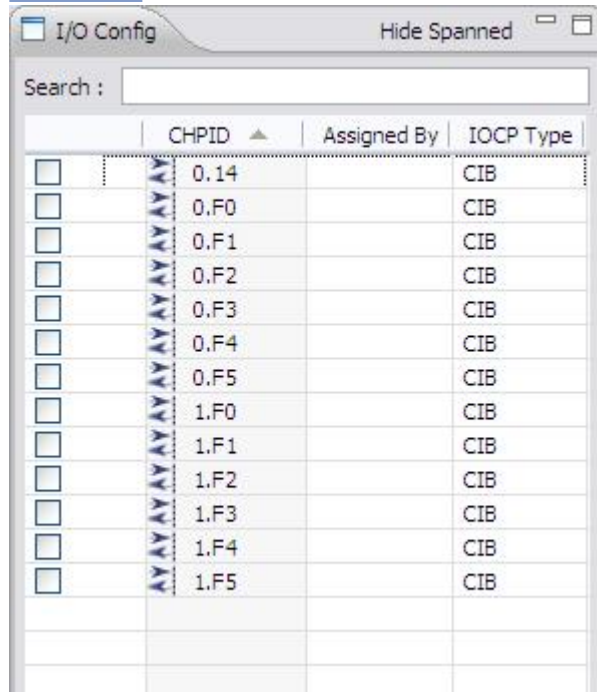
	Name ▲	Type	Data
[-]	Control Unit Group	S0F4 - 0	0.F4
[+]		Members	
[-]	Control Unit Group	FFFE - 0	0.F1, 0.F0, 0.F3, 0.F2, 0.F5
[+]		Members	
[-]	Priority Group	30	0.80, 0.14
[+]		Members	
[-]	Priority Group	10	1.F0, 1.F1, 1.F2, 1.F3, 1.F5, 1.80, 1.F4
[+]		Members	

Figure 100. CHPID Groups pane

By default, this pane is positioned as the lower middle pane. The pane consists of a table with information you use later when looking for intersections. (See Figure 87 on page 72 for an example of this pane with intersections.)

## I/O Config

The I/O Config pane is, by default, positioned as the right pane. Based on your selection in the Hardware pane, the CHPID Mapping Tool filters CHPIDs it displays in the I/O Config pane. [Figure 101](#) on page 82 shows this the I/O Config pane.



*Figure 101. I/O Config pane*

It consists of a **Hide Spanned** control and a table with rows and columns of information you use to perform manual mapping. See [“The I/O Config pane – Columns of information and Hide Spanned control”](#) on page 84 and [“Hide Spanned”](#) on page 86.

### The Hardware pane – Columns of information

The Hardware pane shows the hardware ports available to accept assignments for CHPIDs. [Figure 102](#) on page 83 shows the Hardware pane in the Manual Mapping view.

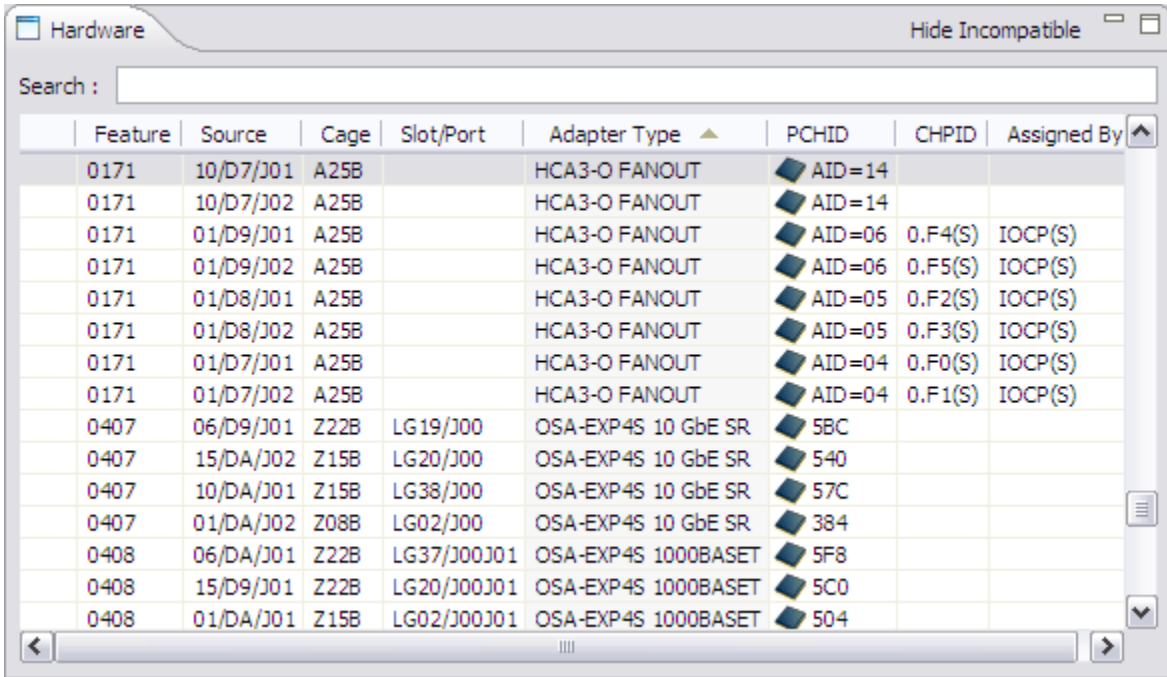


Figure 102. Hardware pane in Manual Mapping view

**Note:** You can sort the columns of information in any pane containing tabular information. For details, see “Sorting information” on page 25. You can also rearrange the columns in any pane containing tabular information; see “Reordering columns within a pane” on page 27.

The following table lists the default column headings and describes the information.

**Note:** You can control which columns of information are displayed in the Hardware pane by selecting or clearing the check boxes in the Columns pane. A check mark indicates that this particular column is displayed in the Hardware pane.

Column name	Description
(Blank or Plus Sign)	This column may be blank or, after you map multiple CHPIDs to a PCHID, may contain a plus sign.
<b>Feature</b>	Details the feature code (FC) at current row's the hardware location.
<b>Source</b>	Provides the location where the channel's link plugs into the processors.
<b>Cage</b>	Provides a 4-character field indicating the frame and cage location where the particular port is located. The frame can be one of the following types:  <b>Z</b> Indicates it is located in the Z-frame.  <b>A</b> Indicate it is located in the A-frame.  The cage identification consists of its Y (vertical) and X (horizontal) axis. The Y mapping is numeric. The X mapping is alphabetic. An example would be A15B, indicating A-frame, Y axis 15, X axis B, as viewed from the front.

<i>Table 6. Column headings and descriptions of contents (continued)</i>	
<b>Column name</b>	<b>Description</b>
<b>Slot/Port</b>	Indicates the card location within the cage and the port location on the card. For example, LG14/J.00 indicates card slot 14 and that the port is the first port on the card (the top port).
<b>Channel Type</b>	Indicates the type of card containing the port.
<b>PCHID</b>	Specifies the PCHID assigned to the port.
<b>CHPID</b>	Is initially blank unless this PCHID has been assigned a CHPID. After you assign a CHPID to a PCHID, the value of the CHPID assignment is displayed in this field.
<b>Assigned By</b>	<p>Indicates how the CHPID assignment was made. Values can include the following sources of the assignment:</p> <p><b>Manual</b> You made the assignment using manual mapping.</p> <p><b>Automatic</b> You made the assignment using automatic mapping.</p> <p><b>IOCP</b> The IOCP source made the assignment.</p> <p><b>Ignore</b> You have selected to have the tool ignore this CHPID.</p> <p><b>Delete</b> You have selected to have the tool ignore this CHPID. When the IOCP input file is exported, the CHPIDs with the Delete assignment are not included in the exported file.</p> <p><b>Config File</b> The CHPID Mapping Tool forced an assignment because of configuration file requirements.</p> <p><b>Note:</b> In certain cases, the CHPID Mapping Tool identifies PCHIDs with new values by displaying "Config File" in the Assigned By column. This applies to CHPIDs affected by:</p> <ul style="list-style-type: none"> <li>• An upgrade (for example, from a z990 to a z10 EC)</li> <li>• a Miscellaneous Equipment Specification (MES) in a z10 EC, z10 BC, z9 EC, or z9 BC.</li> </ul> <p>You are recommended not to change these assignments.</p>

### **The I/O Config pane – Columns of information and Hide Spanned control**

Based on your selection in the Hardware pane, the CHPID Mapping Tool filters CHPIDs it displays in the I/O Config pane. [Figure 103 on page 85](#) shows the columns of information in the I/O Config pane.

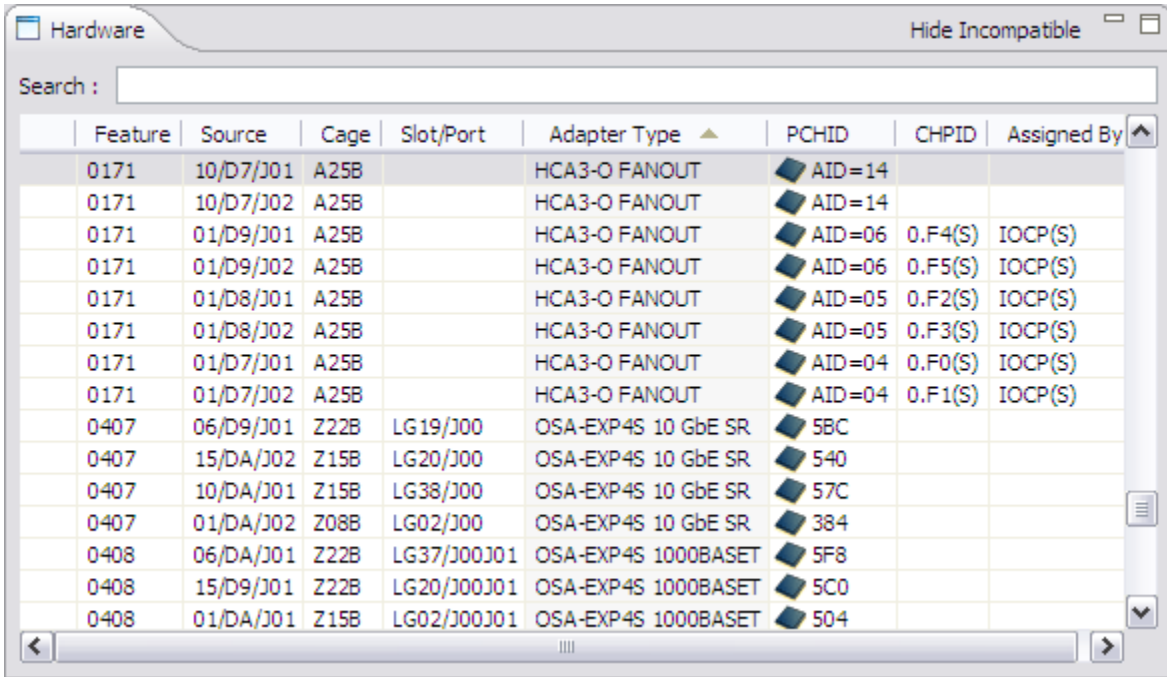


Figure 103. I/O Config pane

Column name	Description
(Check box and arrows)	The check box is for selecting CHPIDs. The left- and right-facing arrow icons indicate input and output throughout the tool; they are not functional.
<b>CHPID</b>	The CHPID number, which is the number of the channel subsystem.
<b>Assigned By</b>	Identifies the method by which the CHPID was assigned. Values can be: <b>Manual</b> You made the assignment using manual mapping. <b>Automatic</b> The tool made the assignment. <b>IOCP</b> The IOCP source made the assignment. <b>Config File</b> The CHPID Mapping Tool forced an assignment because of configuration file requirements. <b>Note:</b> In certain cases, the CHPID Mapping Tool identifies PCHIDs with new values by displaying "Config File" in the Assigned By column. This applies to CHPIDs affected by: <ul style="list-style-type: none"> <li>• An upgrade (for example, from a z990 to a z10 EC)</li> <li>• a Miscellaneous Equipment Specification (MES) in a z10 EC, z10 BC, z9 EC, or z9 BC.</li> </ul> You are recommended not to change these assignments.
<b>IOCP Type</b>	For a complete description of the IOCP CHPID types, see the <i>Input/Output Configuration Program User's Guide</i> .



### Filtering information

With the Hardware > I/O format, clicking a row in the Hardware pane filters the information that the tool displays in the I/O Config pane. The tool displays only compatible CSSs. (With the I/O > Hardware format, clicking a row in the I/O Config pane filters the information in the Hardware pane.)

### Hide Spanned

Figure 103 on page 85 shows all the CHPIDs in the I/O Config pane. CHPIDs can be spanned. Clicking **Hide Spanned** filters the list of CHPIDs by hiding all but one of the spanned CHPIDs. Figure 104 on page 86 shows this:

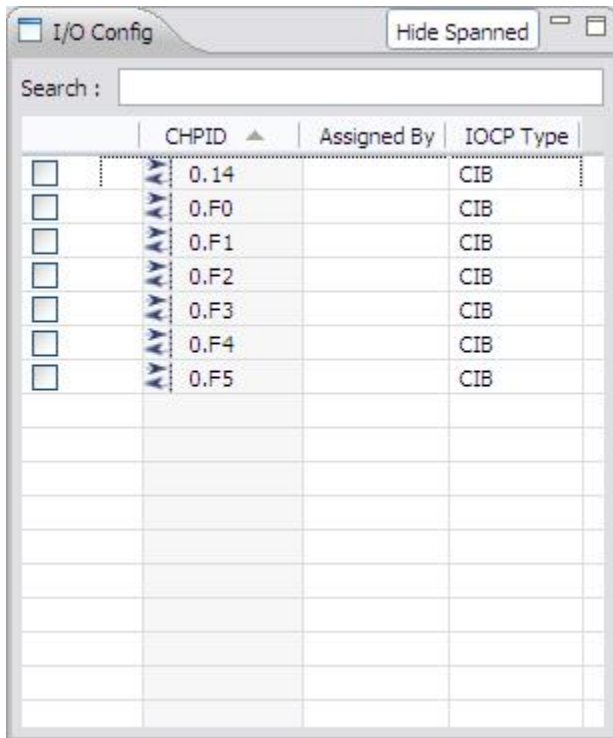


Figure 104. **Hide Spanned** hides additional (spanned) CHPIDs

### Panes in the I/O -> Hardware format

Figure 105 on page 87 shows the Manual Mapping pane using **I/O -> Hardware** format.



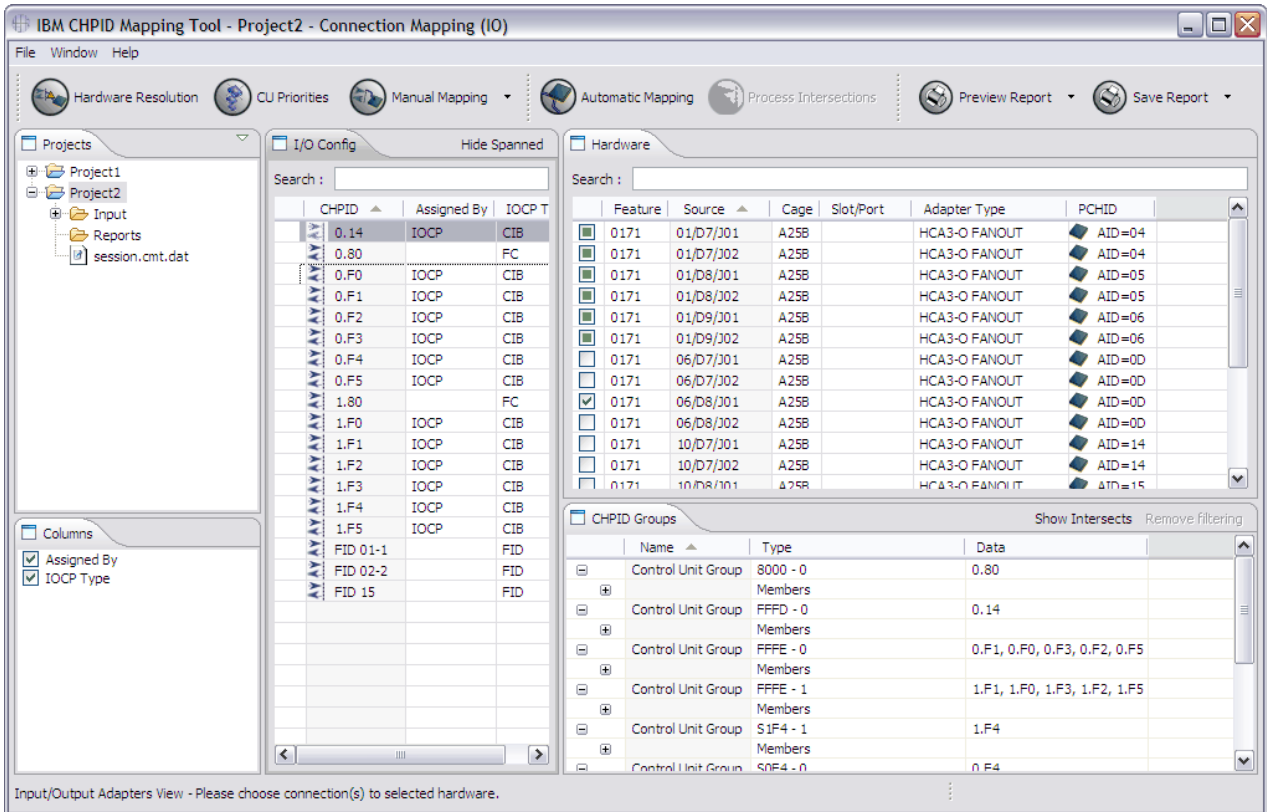


Figure 105. Manual Mapping view - I/O -> Hardware format

You can use this view to select a CHPID and assign hardware to it.

## Filtering information

With the I/O > Hardware format, clicking a row in the I/O Config pane filters the information that the tool displays in the Hardware pane. (With the Hardware > I/O format, clicking a row in the Hardware pane filters the information in the I/O Config pane.)

## Performing manual mapping

Perform the following steps to do manual mapping:

1. Open the Manual Mapping view. To do so, click **Manual Mapping** or click the arrow beside **Manual Mapping** (by default the third button from the left). This opens a list of choices. Figure 106 on page 87 shows this list.



Figure 106. Manual Mapping button in group

### I/O -> Hardware

Displays the Manual Mapping view in the I/O > Hardware format. You probably use this format less frequently than the Hardware > I/O format. In this chapter, you use the Hardware > I/O format.

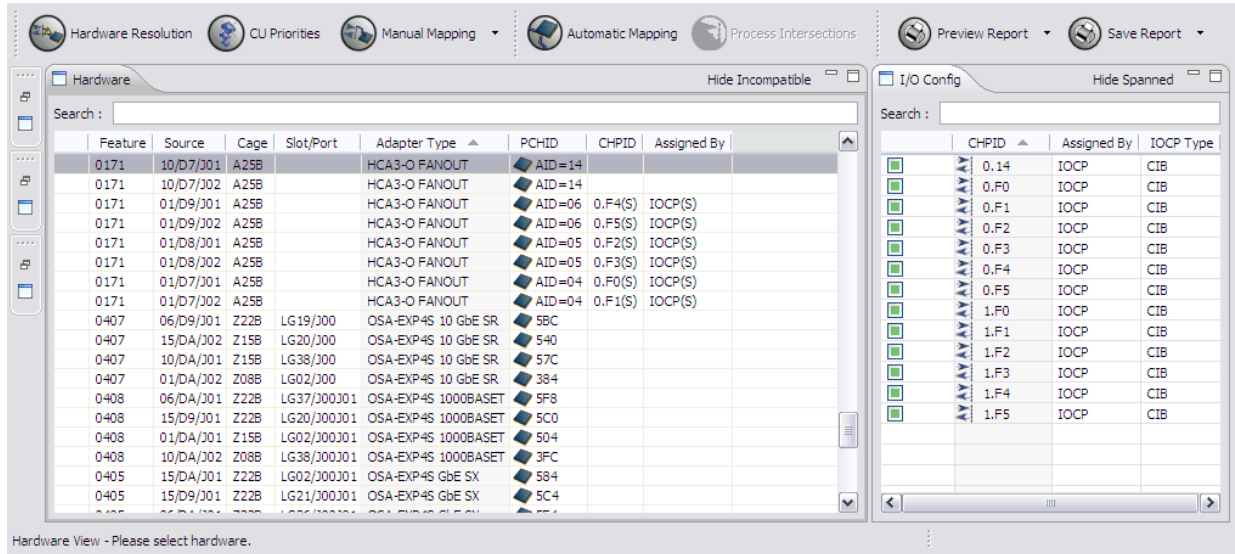
**Hardware -> I/O**

Displays the Manual Mapping view in the Hardware > I/O format. This is the more commonly used format. This format is the default (unless you change it).

The Hardware > I/O format is also displayed if you clicking **Manual Mapping** (and have not changed the default).

The rest of the steps are based on the Hardware >I/O format of the Manual Mapping view.

You perform manual mapping mainly in the Hardware pane and the I/O Config pane of the Manual Mapping view. [Figure 107 on page 88](#) shows these panes.

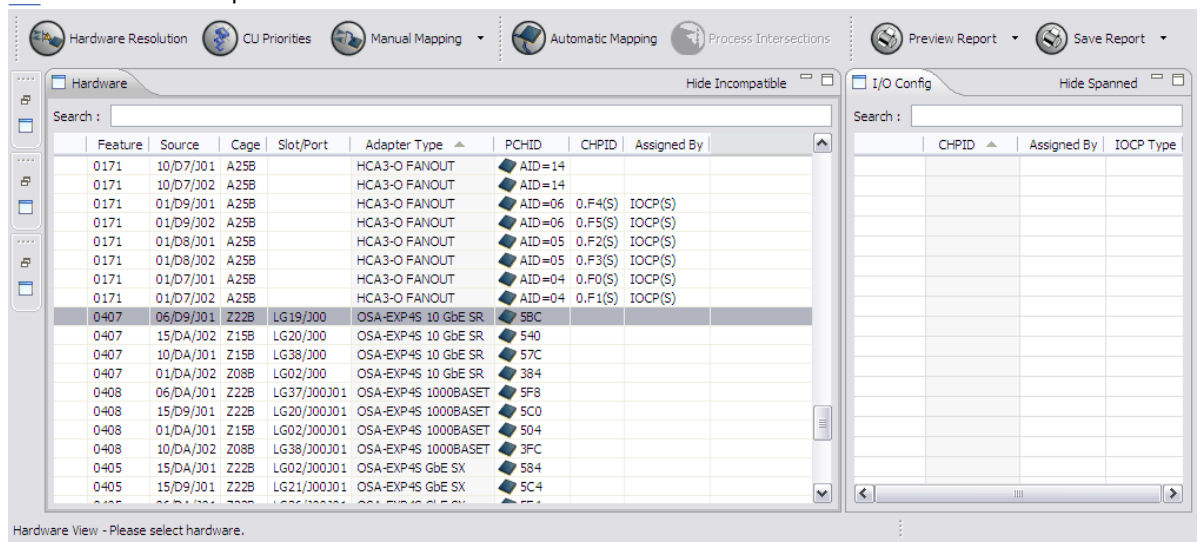


*Figure 107. Manual Mapping view – Hardware pane and I/O Config pane*

2. Select the target row containing the PCHID to which you want to map one or more CHPIDS. [Figure 107 on page 88](#) shows the CHPIDs in the I/O Config pane.

**Note:**

- a. The tool displays only compatible CHPID types in the I/O Config pane.
- b. If the CHPID column is blank, no selections are available in the I/O Config pane. [Figure 108 on page 88](#) shows an example:



*Figure 108. CHPID column is blank - no selections in I/O Config*

3. Map one or more CHPIDs to the PCHID by selecting one or more check boxes in the first column of the I/O Config pane.

- If you map a single CHPID to the selected PCHID, the tool inserts a check mark in the selected check box. The tool also makes the following changes:
  - In the Hardware pane, in the CHPID column, the tool inserts the CHPID number.
  - In the Hardware pane, in the Assigned By column, the tool inserts the value Manual.
  - In the I/O Config pane, in the Assigned By column, the tool inserts the value Manual.

Figure 109 on page 89 shows these changes.

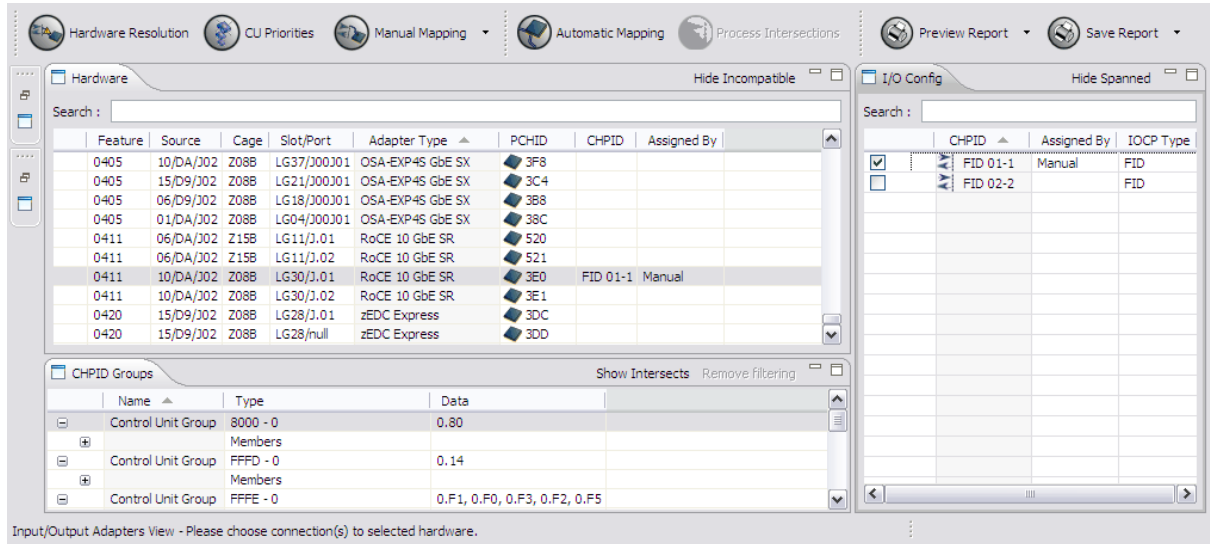


Figure 109. Selecting a check box to map a single CHPID to a PCHID

**Note:**

- If you map a single CHPID to a PCHID, the tool might automatically map an additional CHPID to that PCHID. Figure 110 on page 89 shows an example. The user selected the check box (at 0.F1) in row three of the I/O Config pane, and the tool selected the check box (at 0.F1) in the ninth row as well.

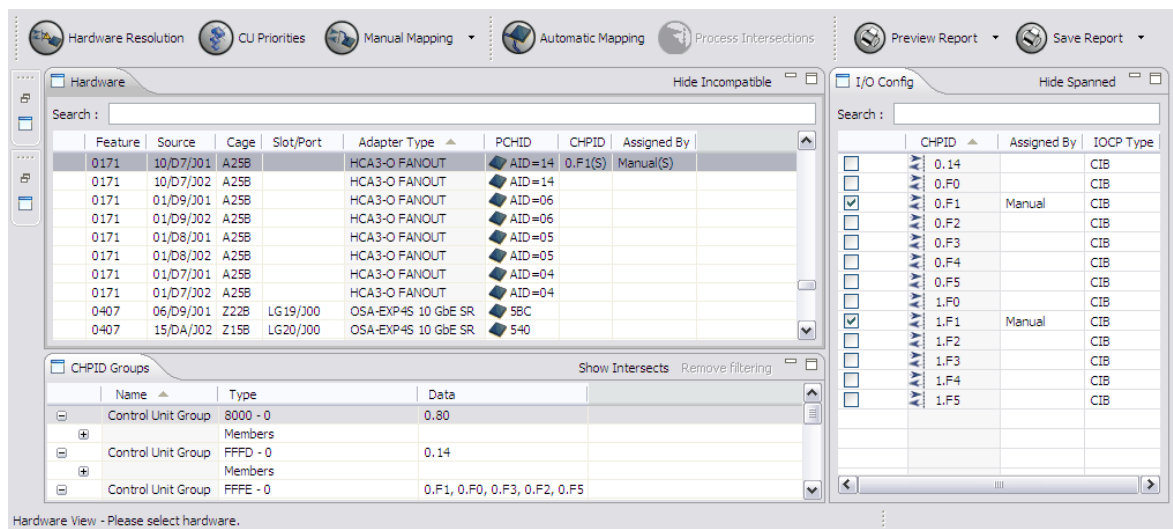


Figure 110. CHPID Mapping Tool automatically maps a CHPID to a PCHID

Notice the (S) after the value Manual in the Assigned By row in the Hardware pane. The (S) indicates the CHPID is spanned.

- If the I/O Config pane has a green box inside a check box, this means the CHPID is already assigned to another PCHID, and you cannot assign it to the target PCHID. Figure 111 on page 90 shows an example.

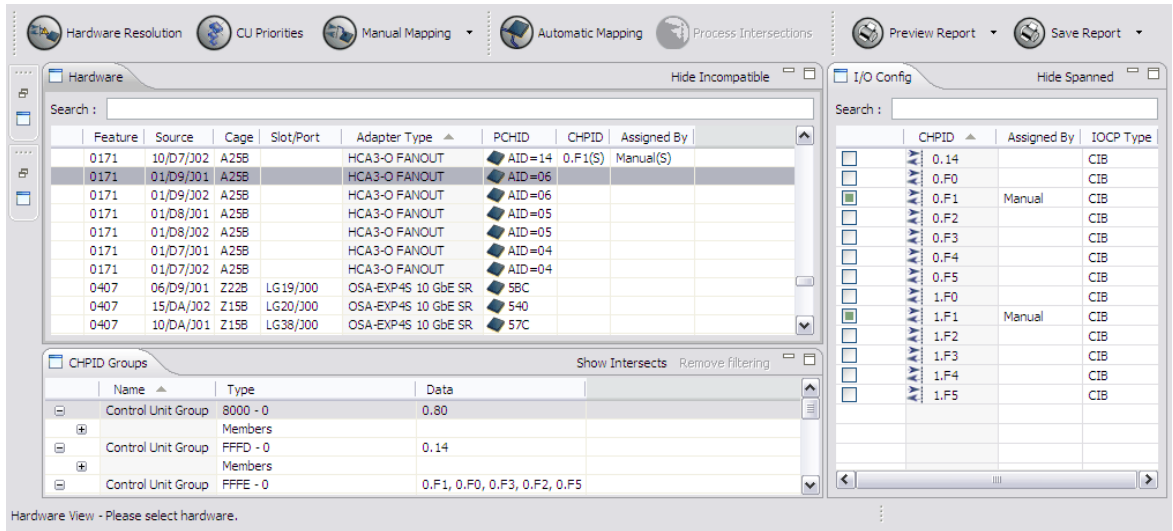


Figure 111. Green squares in check boxes in I/O Config pane

- c. On some channels, you can define multiple CHPIDs. You can define up to 16 CHPIDs on one AID. OSA Express3 cards can have four ports (for two PCHIDs) or two ports (for one PCHID).
- d. If you map more than one CHPID to a PCHID (or the tool does this for you automatically), the tool makes the changes listed in Step “3” on page 88 with two differences:
  - In the Hardware pane, in the first column, the tool displays a plus sign.
  - The tool inserts the value Multiple -> in the CHPID and Assigned By columns.

Figure 112 on page 90 shows an example of these differences.

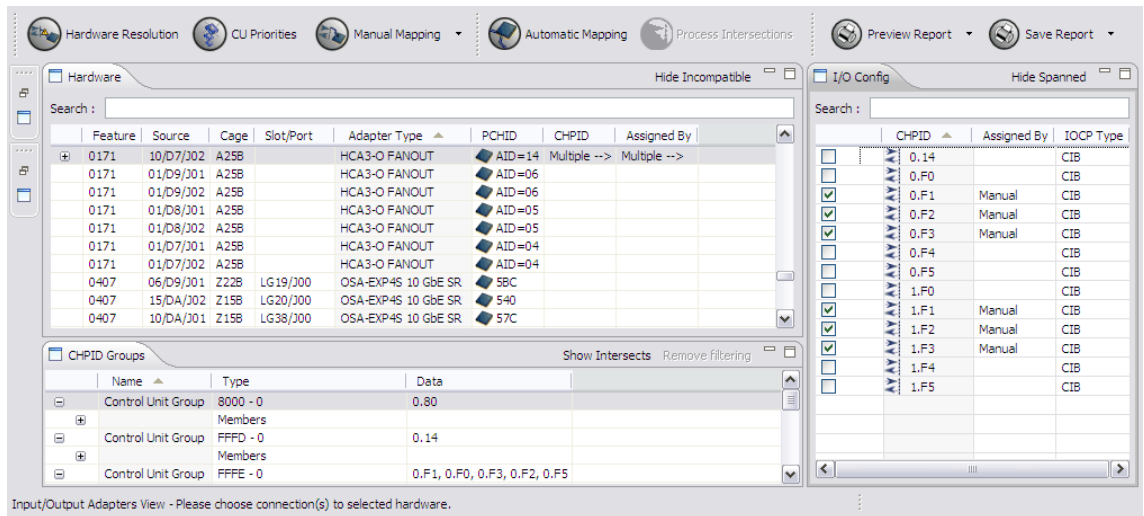


Figure 112. Plus sign in first column and "Multiple -> in CHPID and Assigned By columns

Clicking the plus sign expands the row. Figure 113 on page 91 shows the expansion.

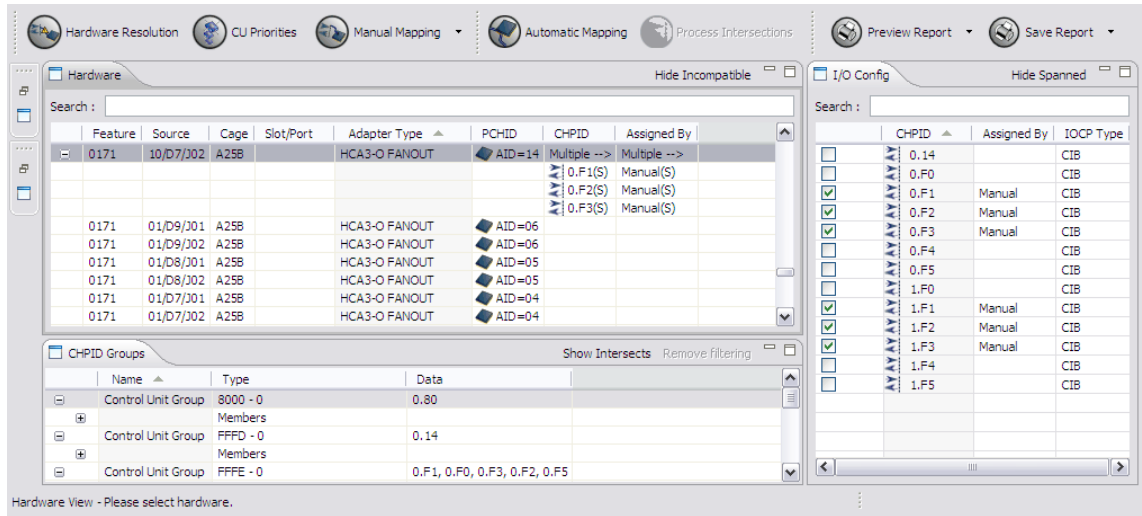


Figure 113. Expanding the information in the Hardware pane

- The plus sign changes to a minus sign.
- The expansion shows the value Manual in the CHPID and Assigned By columns.

**Note:** The (S) after Manual indicates the CHPID is spanned

4. Optionally, save your session. See “Saving a session” on page 48.
5. Optionally, create another IOCP file with statements that include the assignments you have made with the tool. For details, see “Exporting an IOCP input file” on page 51.

## Undoing a manual mapping assignment

When a CHPID is assigned to a PCHID, a check mark is present in the check box in the I/O Config pane. Figure 114 on page 91 shows this.

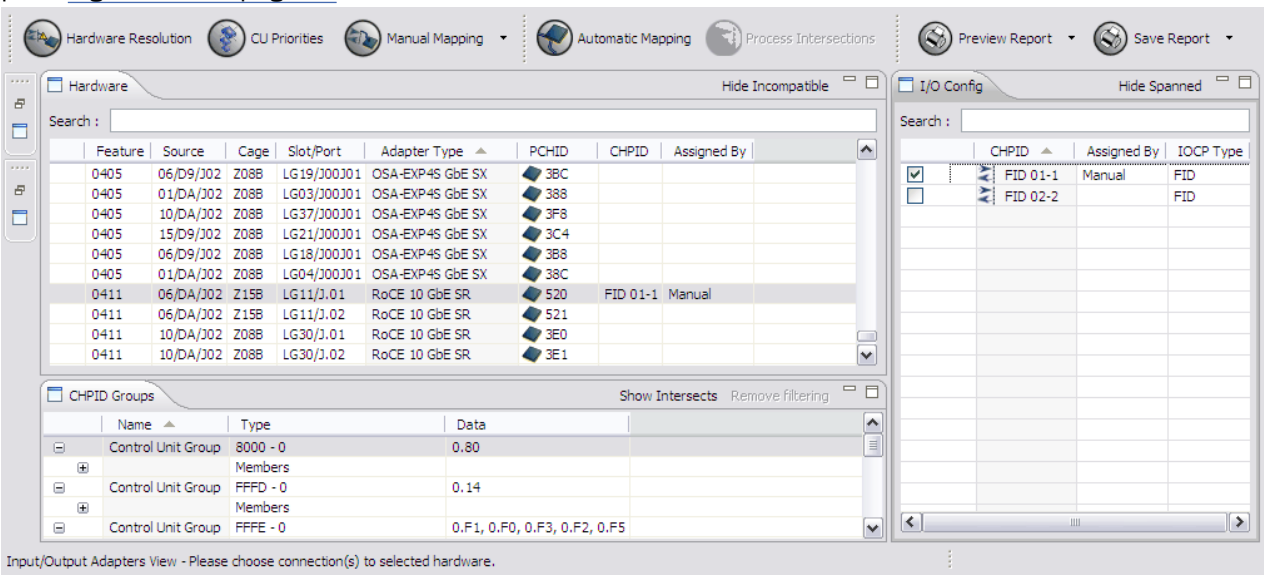


Figure 114. Selecting a check box to map a single CHPID to a PCHID

To undo assigning a CHPID to a PCHID, click the check box containing a check mark. The check box is cleared and the mapping is undone; the tool no longer shows the CHPID number in the CHPID column of

the Hardware pane or the word *Manual* in the Assigned By columns of the Hardware or I/O Config panes. Figure 115 on page 92 shows this.

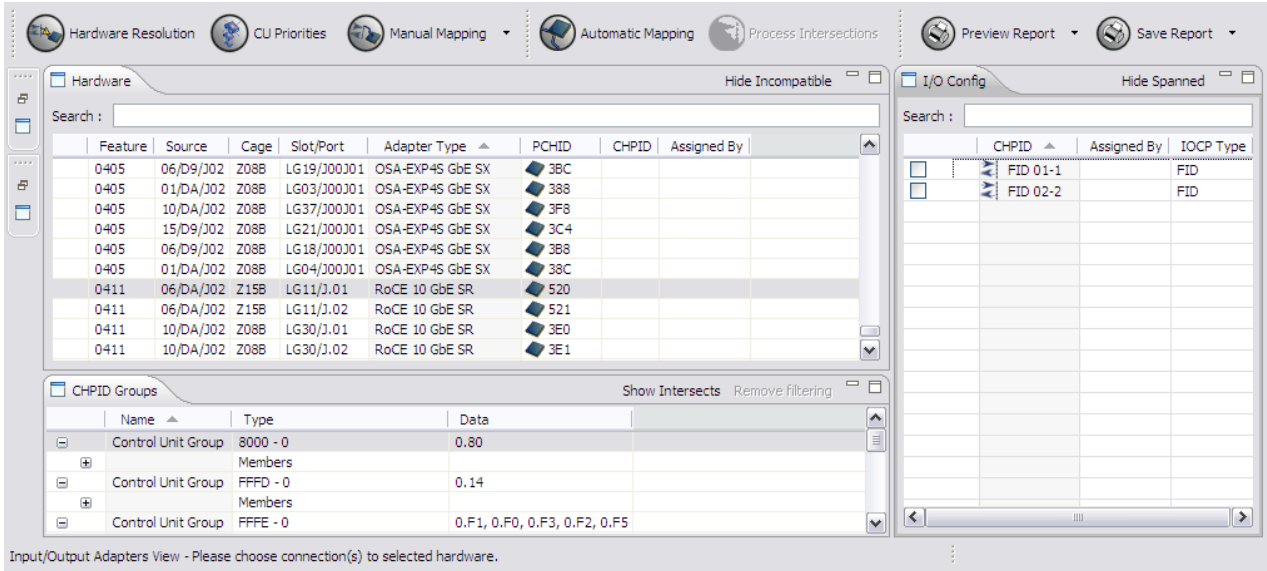


Figure 115. Available CHPIDs displayed in the I/O Config pane

## Manually assigning CHPIDS of type CIB and CS5

If you have CHPIDs of IOCP type CIB or CS5, you must assign these CHPIDs to make Automatic Mapping available.

Perform the following steps to make Automatic Mapping available:

1. If you have not already done so, ensure that the tool is displaying the Manual Mapping pane in the Hardware > I/O format.
2. Find all the PCHIDs of type IFB, HCA, and PCIe by doing one of the following steps:
  - Type IFB, HCA, or PCIe in the **Search** field near the top of the pane, (Figure 116 on page 92 shows the search field in the Hardware pane before the search) and click **Enter**.

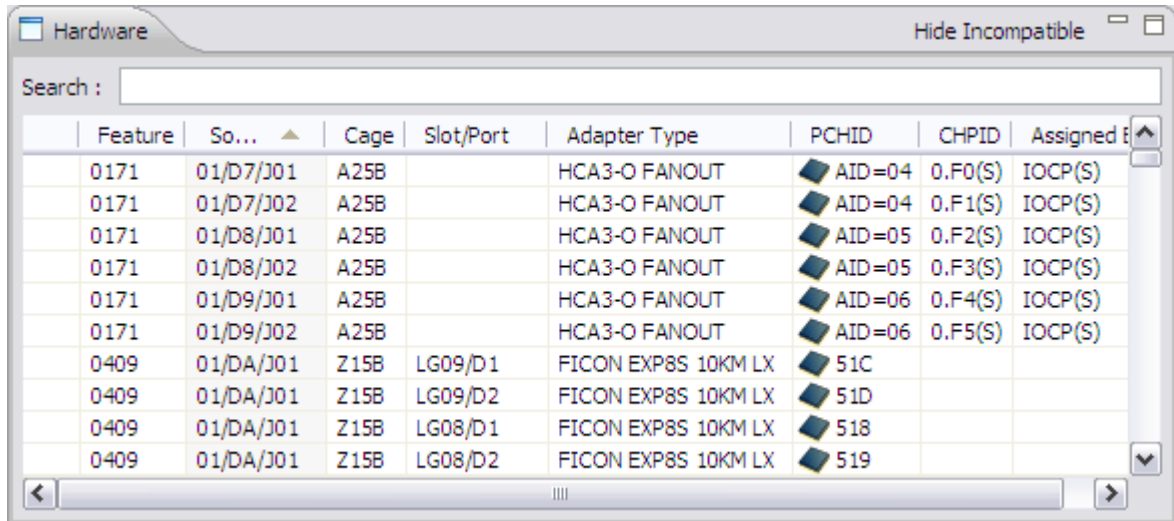


Figure 116. Hardware pane in Manual Mapping view

Figure 117 on page 93 shows the results of the search.



Feature	So...	Cage	Slot/Port	Adapter Type	PCHID	CHPID	Assigned By
0171	01/D7/J01	A25B		HCA3-O FANOUT	AID=04	0.F0(S)	IOCP(S)
0171	01/D7/J02	A25B		HCA3-O FANOUT	AID=04	0.F1(S)	IOCP(S)
0171	01/D8/J01	A25B		HCA3-O FANOUT	AID=05	0.F2(S)	IOCP(S)
0171	01/D8/J02	A25B		HCA3-O FANOUT	AID=05	0.F3(S)	IOCP(S)
0171	01/D9/J01	A25B		HCA3-O FANOUT	AID=06	0.F4(S)	IOCP(S)
0171	01/D9/J02	A25B		HCA3-O FANOUT	AID=06	0.F5(S)	IOCP(S)
0171	06/D7/J01	A25B		HCA3-O FANOUT	AID=0D		
0171	06/D7/J02	A25B		HCA3-O FANOUT	AID=0D		
0171	06/D8/J01	A25B		HCA3-O FANOUT	AID=0D	0.14	IOCP
0171	06/D8/J02	A25B		HCA3-O FANOUT	AID=0D		
0171	10/D7/J01	A25B		HCA3-O FANOUT	AID=14		
0171	10/D7/J02	A25B		HCA3-O FANOUT	AID=14		
0171	10/D8/J01	A25B		HCA3-O FANOUT	AID=15		
0171	10/D8/J02	A25B		HCA3-O FANOUT	AID=15		
0171	10/D9/J01	A25B		HCA3-O FANOUT	AID=16		
0171	10/D9/J02	A25B		HCA3-O FANOUT	AID=16		
0171	15/D7/J01	A25B		HCA3-O FANOUT	AID=1D		
0171	15/D7/J02	A25B		HCA3-O FANOUT	AID=1D		
0171	15/D8/J01	A25B		HCA3-O FANOUT	AID=1D		
0171	15/D8/J02	A25B		HCA3-O FANOUT	AID=1D		

Figure 117. Results of search

**Note:** To reset the contents of the Hardware pane, remove the contents of the search field.

- In the Hardware pane, click the **Adapter Type** column header. This action sorts the column by adapter type. [Figure 118 on page 94](#) shows this.

Feature	Source	Cage	Slot/Port	Adapter Type	PCHID	CHPID	Assigned By
0410	15/DA/J01	Z22B	LG09/D1	FICON EXP85 SX	59C		
0410	15/DA/J01	Z22B	LG09/D2	FICON EXP85 SX	59D		
0171	06/D8/J01	A25B		HCA3-O FANOUT	AID=0D	0.14	IOCP
0171	06/D8/J02	A25B		HCA3-O FANOUT	AID=0D		
0171	06/D7/J01	A25B		HCA3-O FANOUT	AID=0D		
0171	06/D7/J02	A25B		HCA3-O FANOUT	AID=0D		
0171	15/D8/J01	A25B		HCA3-O FANOUT	AID=1D		
0171	15/D8/J02	A25B		HCA3-O FANOUT	AID=1D		
0171	15/D7/J01	A25B		HCA3-O FANOUT	AID=1D		
0171	15/D7/J02	A25B		HCA3-O FANOUT	AID=1D		
0171	10/D9/J01	A25B		HCA3-O FANOUT	AID=16		
0171	10/D9/J02	A25B		HCA3-O FANOUT	AID=16		
0171	10/D8/J01	A25B		HCA3-O FANOUT	AID=15		
0171	10/D8/J02	A25B		HCA3-O FANOUT	AID=15		
0171	10/D7/J01	A25B		HCA3-O FANOUT	AID=14		
0171	10/D7/J02	A25B		HCA3-O FANOUT	AID=14		
0171	01/D9/J01	A25B		HCA3-O FANOUT	AID=06	0.F4(S)	IOCP(S)
0171	01/D9/J02	A25B		HCA3-O FANOUT	AID=06	0.F5(S)	IOCP(S)
0171	01/D8/J01	A25B		HCA3-O FANOUT	AID=05	0.F2(S)	IOCP(S)
0171	01/D8/J02	A25B		HCA3-O FANOUT	AID=05	0.F3(S)	IOCP(S)
0171	01/D7/J01	A25B		HCA3-O FANOUT	AID=04	0.F0(S)	IOCP(S)

Figure 118. Hardware pane after sorting by adapter type

3. For every row having HCA in the Adapter Type column, perform the following steps:

- a. Click a row in that has a adapter type of HCA. The tool displays the CHPIDs with IOCP type of CIB that are available. Figure 119 on page 94 shows an example:

CHPID	Assigned By	IOCP Type
<input type="checkbox"/>	0.14	CIB
<input type="checkbox"/>	0.F0	CIB
<input type="checkbox"/>	0.F1	CIB
<input type="checkbox"/>	0.F2	CIB
<input type="checkbox"/>	0.F3	CIB
<input type="checkbox"/>	0.F4	CIB
<input type="checkbox"/>	0.F5	CIB
<input type="checkbox"/>	1.F0	CIB
<input type="checkbox"/>	1.F1	CIB
<input type="checkbox"/>	1.F2	CIB
<input type="checkbox"/>	1.F3	CIB
<input type="checkbox"/>	1.F4	CIB
<input type="checkbox"/>	1.F5	CIB

Figure 119. Adapter type of HCA Link and associated CIB type CHPIDs

- b. Select one or more empty check boxes in the I/O Config pane to assign the CHPID or CHPIDs.

Figure 120 on page 95 shows an example of selecting a single check box.



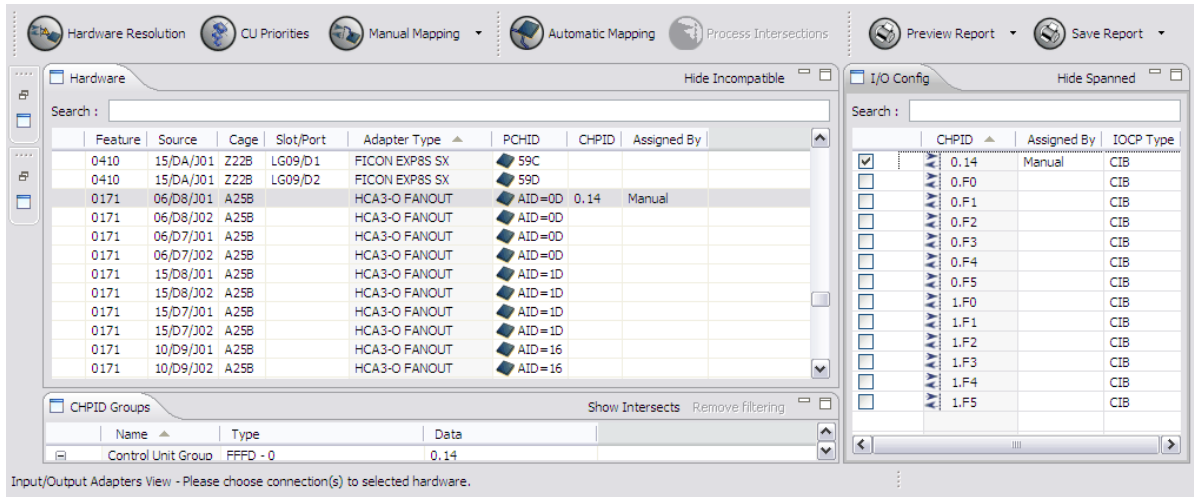


Figure 120. Changes in Hardware and I/O Config panes

If you select a single check box, the tool makes the following changes:

- In the Hardware pane:
  - In the CHPID column, it inserts the CHPID number.
  - In the Assigned By, it inserts the value Manual
- In the I/O Config pane:
  - In the first column, it puts a green check mark in the check box.
  - In the Assigned By, it inserts the value Manual.

**Note:**

- 1) There may be cases in which you select a single check box but the tool automatically selects additional check boxes. This occurs because the CHPID you selected is spanned, as is its associated CSS. Any additional CHPIDs are assigned to the same PCHID. Figure 121 on page 95 shows an example in which the user selected 0.F0 and the tool automatically selected 1.F0.

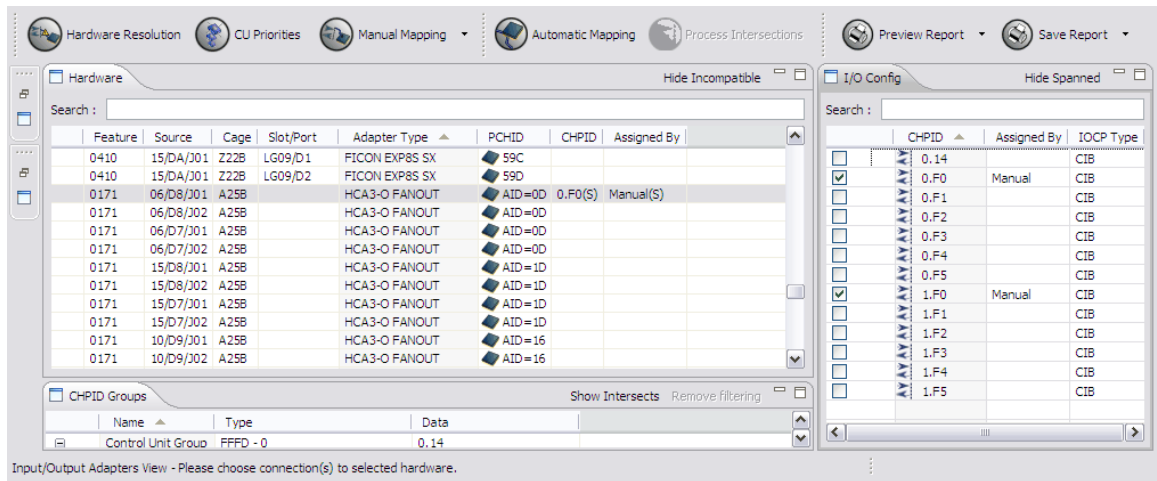


Figure 121. Multiple check marks for a spanned CHPID after selection of a single check box

- 2) In the I/O Config pane, you can click **Hide Spanned** to hide the additional item or items. Figure 122 on page 96 shows the additional item hidden.

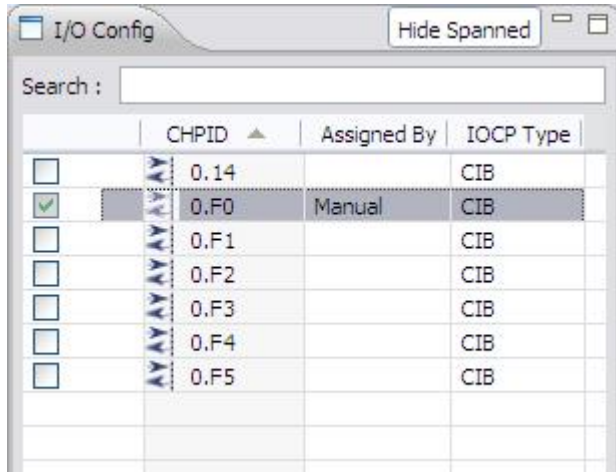


Figure 122. Results of clicking Hide Spanned

- 3) In the I/O Config pane, a check box might have a green square in it. This means the CHPID is already assigned to another PCHID and you cannot select it. Figure 123 on page 96 shows an example. CHPIDs 0.F0 and 1.F0 are already assigned.

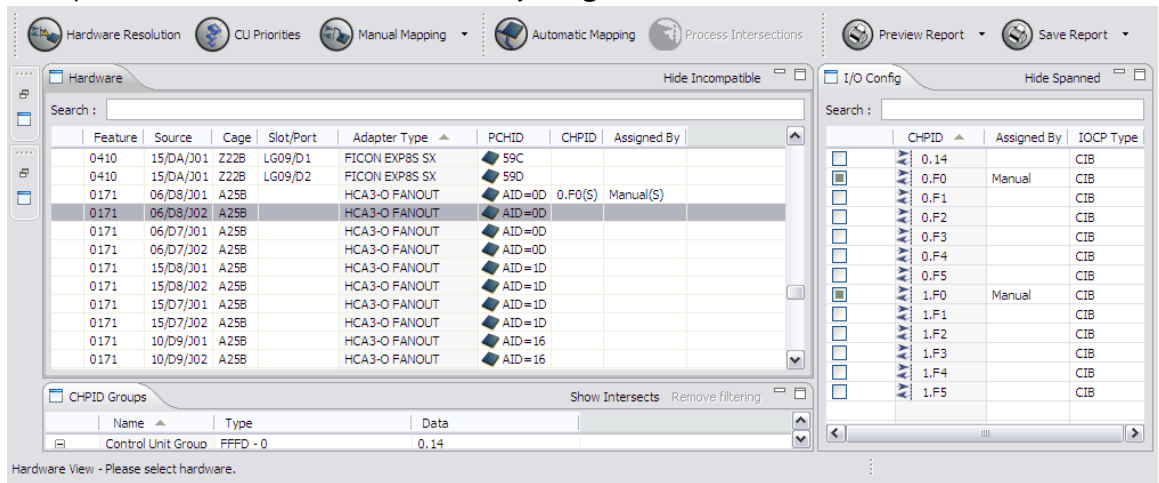


Figure 123. Green square inside check box means CHPID is unavailable

If you select more than one check box, the changes in the I/O Config pane are the same as for a single selection. However, in the Hardware pane, there are several differences:

- The value in the CHPID and Assigned By columns is Multiple (rather than Manual). Figure 124 on page 97 shows Multiple in these columns.

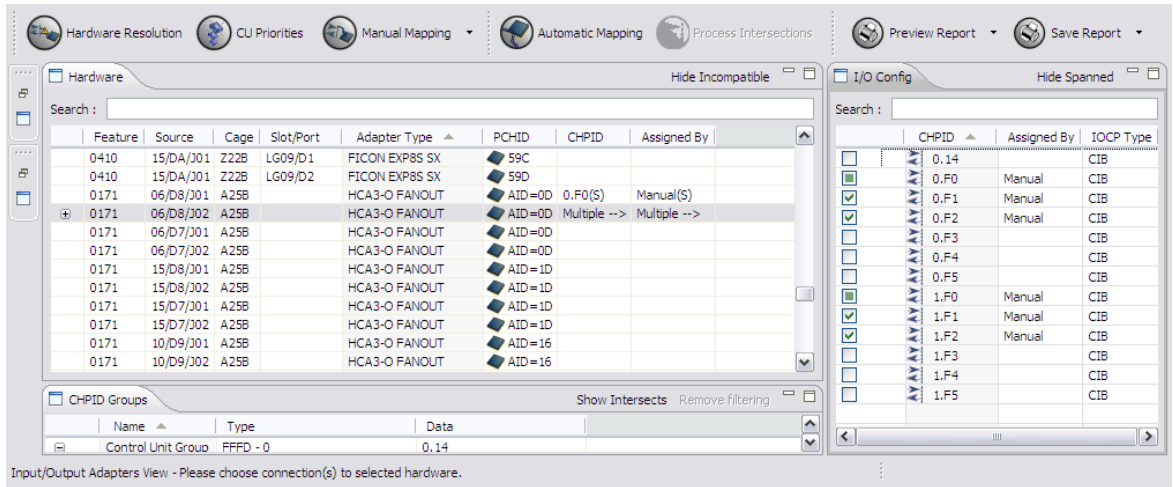


Figure 124. Hardware pane displays "Multiple" in Assigned By column

- The first column of the Hardware pane has a box with a plus sign in it. Figure 125 on page 97 shows an example.

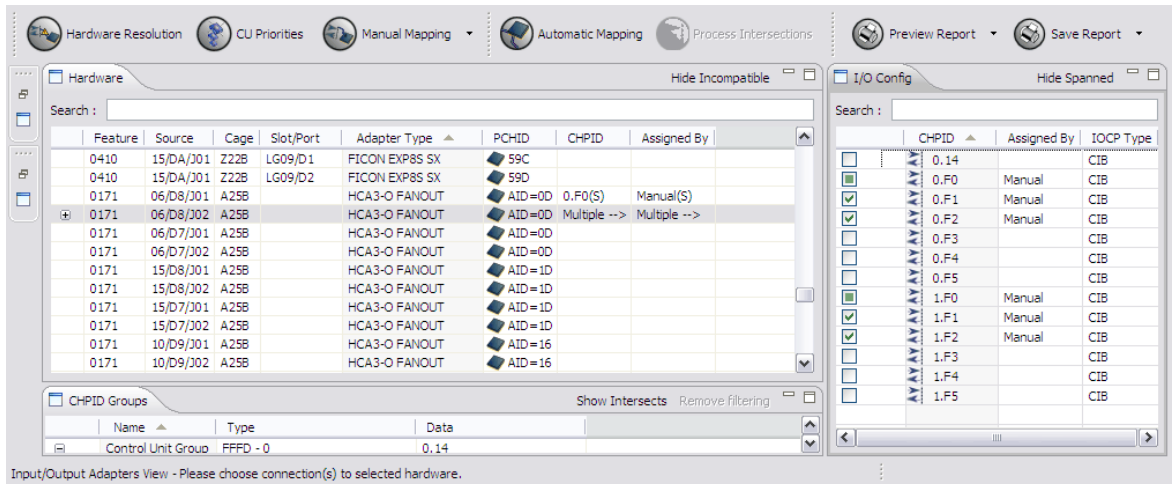


Figure 125. Clicking + displays additional details

If you click the +, the row expands, showing all the CHPIDs. Figure 126 on page 97 shows an example with the row expanded to show 0.F0 and 0.F1.

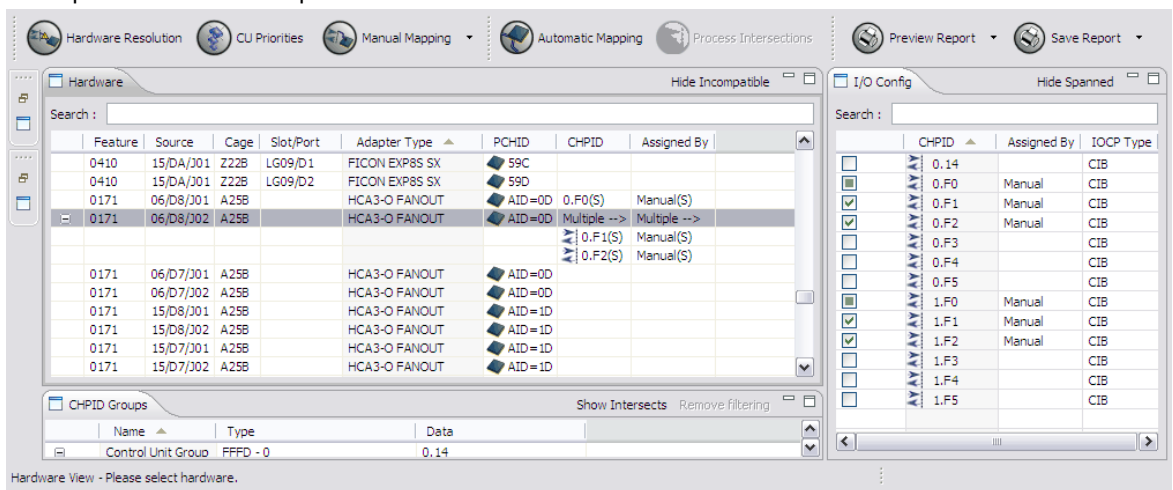


Figure 126. Expanding the row to display multiple CHPIDs

- In the expanded view of the CHPIDs, the tool displays Manual (S) in the Assigned By column for each CHPID. Manual indicates that you assigned the CHPID manually. The (S) indicates the CHPID and its associated CSS are spanned.

After you assign all the CHPIDs of IOCP type CIB and CS5, you will be able to perform Automatic Mapping.

## Manually assigning CHPIDs of type CL5, HYL, ROCE, and ROC2

---

Manual mapping may be required for PCHIDs with multiple ports allowing multiple CHPIDs per port. This includes zHyperlink Express, Coupling Express LR, and the RoCE cards. The CHPID Mapping Tool only supports mapping of a single CHPID to each PCHID port. Assignment of additional CHPIDs to a PCHID port must be done manually.

## Manually assigning CHPIDs of type FC and FCP

---

Beginning with IBM z14, the Kraken FICON I/O adapter cards with 2 ports do not allow mixing of FC and FCP CHPIDs on an adapter card. The CHPID types must be the same on both ports of an adapter card. If one PCHID port is assigned a CHPID of TYPE=FC, then the CHPID assigned to the other port on that PCHID must also be TYPE=FC, and the same rule applies for TYPE=FCP. The CHPID Manual Tool cannot evenly distribute FC and FCP devices and fully populate the cards when both CHPID types are defined. Manual mapping must be done.

## Chapter 9. Reports

This chapter describe using the CHPID Mapping Tool to create, save, view, and print reports.

Keep in mind that reports are static, which means that they do not necessarily reflect the current data. They reflect the data as it was at the time you saved the report.

### Previewing and saving reports

**Note:** The person who will install the I/O cables during system installation needs one of the reports. The Port Report, sorted by location, is recommended. The installer can use this to help with labeling the cables. The labels must include the PCHID or cage/slot/port.

**Preview Report** and **Save Report** are located near the top of the IBM CHPID Mapping Tool window. Figure 127 on page 99 shows these buttons.

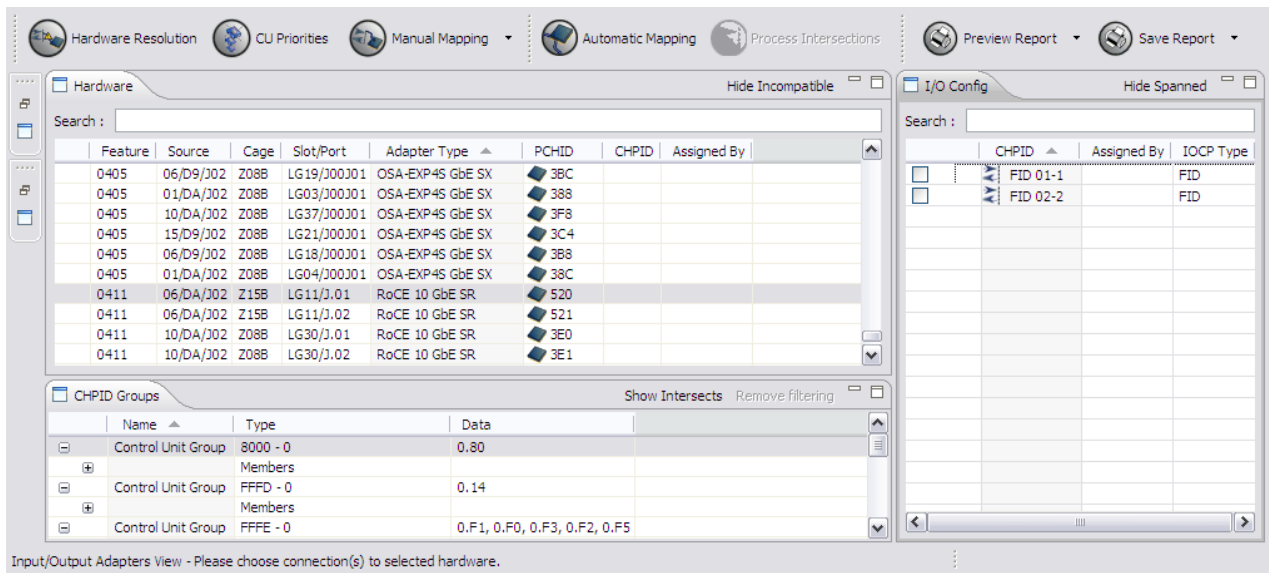


Figure 127. Preview Report and Save Report buttons

Click Preview Report or Save Report to display choices. The choices are the same except Save Report lists one additional selection.



Figure 128. Choices under Preview Report and Save Report

### CHPID Report

This report is similar to the one e-config produces but includes the CHPID values. It shows the values based on a hardware location (primarily slot).

### Port Report

This report presents each I/O port, type, and, if assigned, the CHPID and its Assigned By value.

Four items are under Port Report. Figure 129 on page 100 shows these.

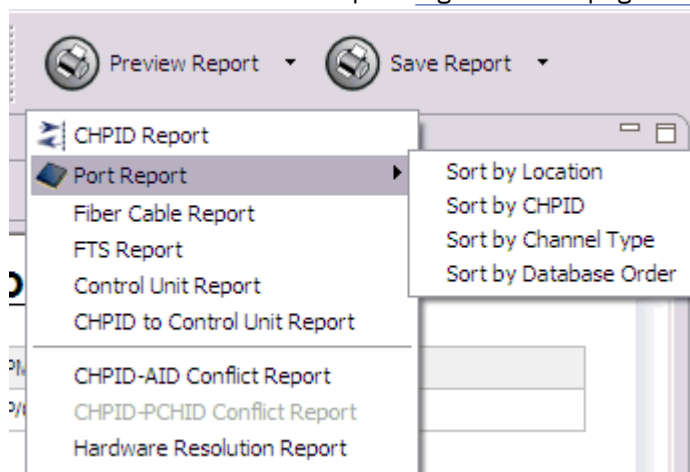


Figure 129. Port Report options

- Sort by Location
- Sort by CHPID
- Sort by Database Order
- Sort by Channel Type

### Fiber Cable Chart

This assists with documenting cabling from an I/O port to a device.

### FTS Report

This is a specialized report to assist with documenting the cabling from the trunking brackets to the patch panel.

#### Note:

1. The **FTS Report** is called **FQC Report** for machines preceding z10.
2. z10 EC and z10 BC support this report for FICON and ESCON channels only.

- This report is available only if the FTS (or FQC) feature is present in the CFReport file (or hardware configuration file).

### Control Unit Report

This report is available only after IOCP has been loaded. It shows the hardware connections associated to each control unit. It provides a good record of how you prioritized the control units and any availability intersections you may have encountered.

### CHPID to Control Unit Report

This report is available only after IOCP has been loaded. It shows information about each CHPID, hardware connection, and the control units on which it is defined.

### Batch Save...

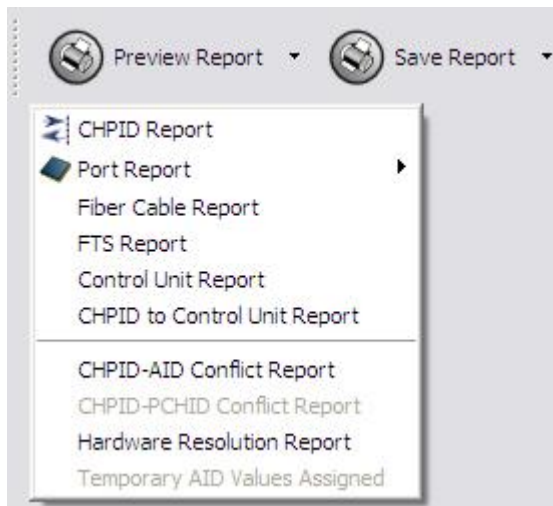
This is available only under Save Report. This is used when the user wants to save several reports at the same time. You can select which reports to be saved and what format is required. The current supported formats to save reports are PDF, HTML, and CSV.

## Previewing reports

---

Perform the following steps to preview a report:

- Click **Preview Report**. The tool displays a list of types of reports. [Figure 130 on page 101](#) shows this list.



*Figure 130. Choices under Preview Report*

- Click one of the items under Preview Report.
- If you click **Port Report** you additionally need to click a **Sort by...** selection. [Figure 131 on page 102](#) shows these additional selections.



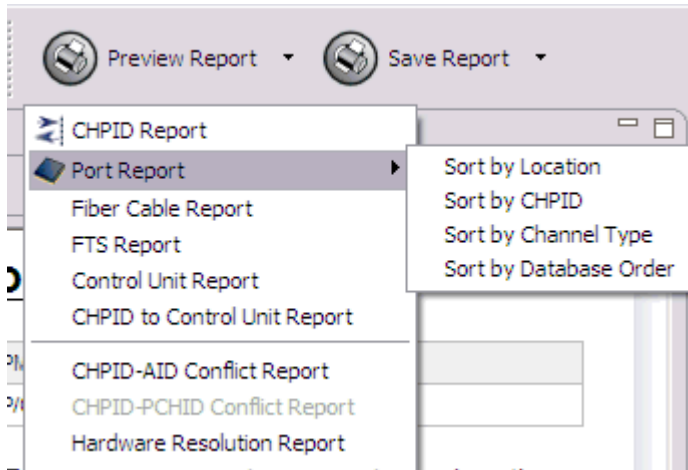


Figure 131. Additional options under Port Report

The CHPID Mapping Tool displays the Reports view.

Figure 132 on page 102 shows this.

 A screenshot of the 'Report' window in the CHPID Mapping Tool. The window title is 'Report' and it has a 'Print' button in the top right corner. The main content area is titled 'CHPID Mapping Tool Product Plug-in 0.0.2 - CHPID Report'. Below the title, there is a table with two columns: 'Control Number: 19032911 (CFR)' and 'Report Created: 8/12/11 5:27 PM'. The second row shows 'Machine: 2097-E56' and 'IOCP File: /Project2/Input/IOCP/Copy of IESP1CIBSAMP.IOCP'. Below this is a note: 'Note: This report indicates the results of using the CHPID Mapping Tool, using the information based on the above control number. Please ensure this configuration is still accurate before proceeding.' The main part of the report is a table with the following columns: 'Source', 'Cage', 'Slot', 'F/C', and 'CSS.CHPID/PCHID/Ports or AID'. The table contains several rows of data, including source identifiers like '01/D9/J01' and '10/D9/J01', cage and slot identifiers like 'A01B', 'LG01', and 'LG09', and F/C values like '3366', '0863', and '2323'. The 'CSS.CHPID/PCHID/Ports or AID' column lists various port and channel identifiers such as '/100/J00', '/101/J01', and '/17A/I10'.
 

Source	Cage	Slot	F/C	CSS.CHPID/PCHID/Ports or AID
01/D9/J01	A01B	LG01	3366	___/100/J00 ___/101/J01
10/D9/J01	A01B	LG02	0863	___/110/P00 ___/111/P01
01/D9/J01	A01B	LG03	3365	___/120/J00 ___/121/J01
10/D9/J01	A01B	LG04	3322	___/130/D01 ___/131/D02 ___/132/D03 ___/133/D04
01/D9/J01	A01B	LG06	3324	___/140/D01 ___/141/D02 ___/142/D03 ___/143/D04
10/D9/J01	A01B	LG07	3324	___/150/D01 ___/151/D02 ___/152/D03 ___/153/D04
01/D9/J01	A01B	LG08	2323	___/160/J00 ___/161/J01 ___/162/J02 ___/163/J03 ___/164/J04 ___/165/J05 ___/166/J06 ___/167/J07 ___/168/J08 ___/169/J09 ___/16A/J10 ___/16B/J11 ___/16C/J12 ___/16D/J13 ___/16E/J14
10/D9/J01	A01B	LG09	2323	___/170/J00 ___/171/J01 ___/172/J02 ___/173/J03 ___/174/J04 ___/175/J05 ___/176/J06 ___/177/J07 ___/178/I08 ___/179/I09 ___/17A/I10 ___/17B/I11

Figure 132. The Reports view displaying CHPID report as an example

## The Report view

The Reports view is similar for all types of reports. It consists of two panes:

### Projects pane

By default, this is positioned on the left. (It is on the top left if there are two panes on the left.) See [“The Projects pane” on page 15](#) for a detailed description.

### Report pane

By default this is positioned on the right. It displays the report you selected. [Figure 132 on page 102](#) shows a more detailed example of the CHPID Report in the Report pane.

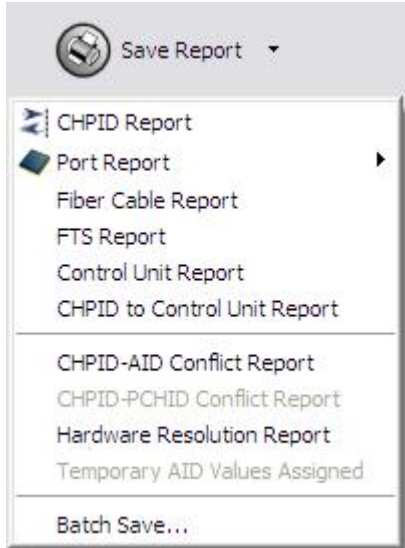


## Saving reports

You can save individual reports or save multiple reports in batch.

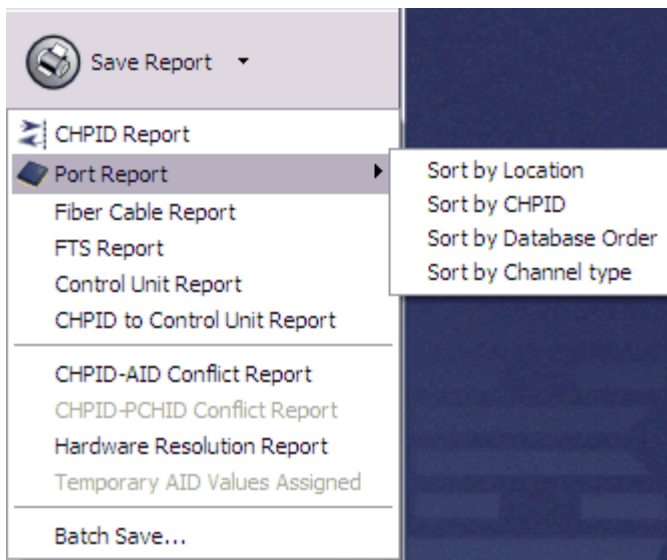
To save an individual report, perform the following steps:

1. Click the arrow beside **Save Report**. This displays types of reports. [Figure 133 on page 103](#) shows this.



*Figure 133. Choices under Save Report*

2. Click one of the report choices under Save Report.
3. If you click **Port Report** you additionally need to click a **Sort by...** selection. [Figure 134 on page 103](#) shows this.



*Figure 134. Additional options under Port Report*

The tool displays a window with a wizard for creating a new report. [Figure 135 on page 104](#) shows an example of the CHPID Report window.

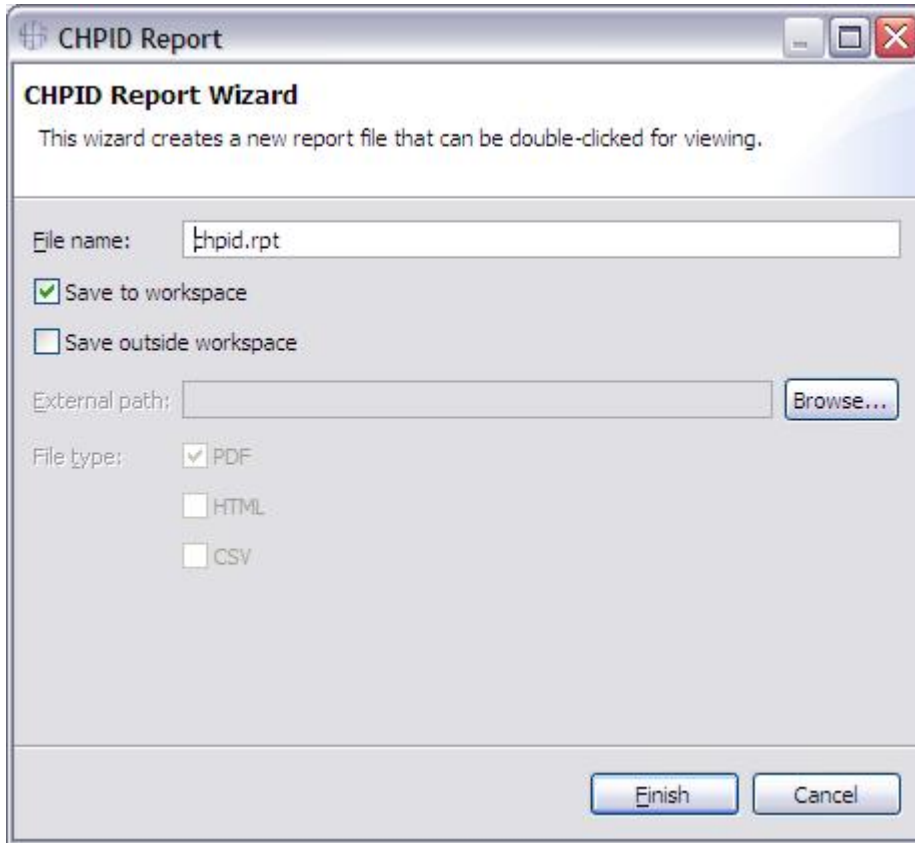


Figure 135. Window for saving the CHPID Report

The window is similar for all types of reports.

4. When saving a report, you can optionally change the default file name. [Table 8 on page 104](#) summarizes information about the default files names.

*Table 8. Summary of default file names of reports*

Report name	Default file names
CHPID Report	chpid.rpt
Port Report	pchid.rpt
Fiber Cable Report	Fiber Cable.rpt
FTS Report	FTS.rpt
Control Unit Report	Control Unit.rpt
CHPID to Control Unit Report	chpidtocu.rpt

5. If you want to save the report in a folder other than the **workspace** folder, select **Save outside workspace**. If you do this, the tool makes available the **External path** and **File type** fields.

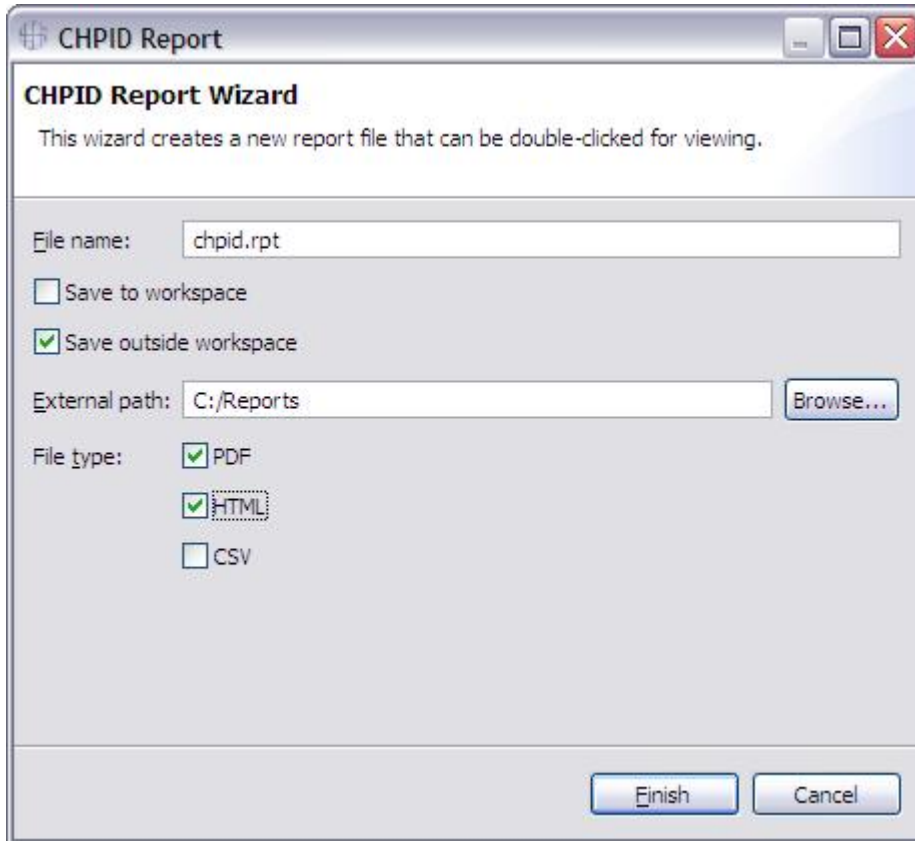


Figure 136. Window for saving the CHPID Report outside the workspace

- a. Type the **External path** value in the field or click **Browse** to open the Browse For Folder window in which you navigate to the path and click **OK**.
  - b. If you want to save the report in HTML, select **HTML**. The tool selects **PDF** by default. This remains selected after you select HTML. If you do not want to save an additional version of the report in PDF format, clear **PDF**.
6. If you do not want to save an additional copy of the report in the **workspace** folder, clear **Save to workspace**. (By default, the tool selects **Save to workspace**. This remains selected even if you select **Save outside workspace**.)
- Note:** The tool creates the **workspace** folder when you open it for the first time.
7. Click **Finish**. The tool saves the report in the specified directory. [Table 9 on page 105](#) summarizes the file names of the reports. Notice that, if you save outside the **workspace** folder, either .pdf or .html follows the extension .rpt.

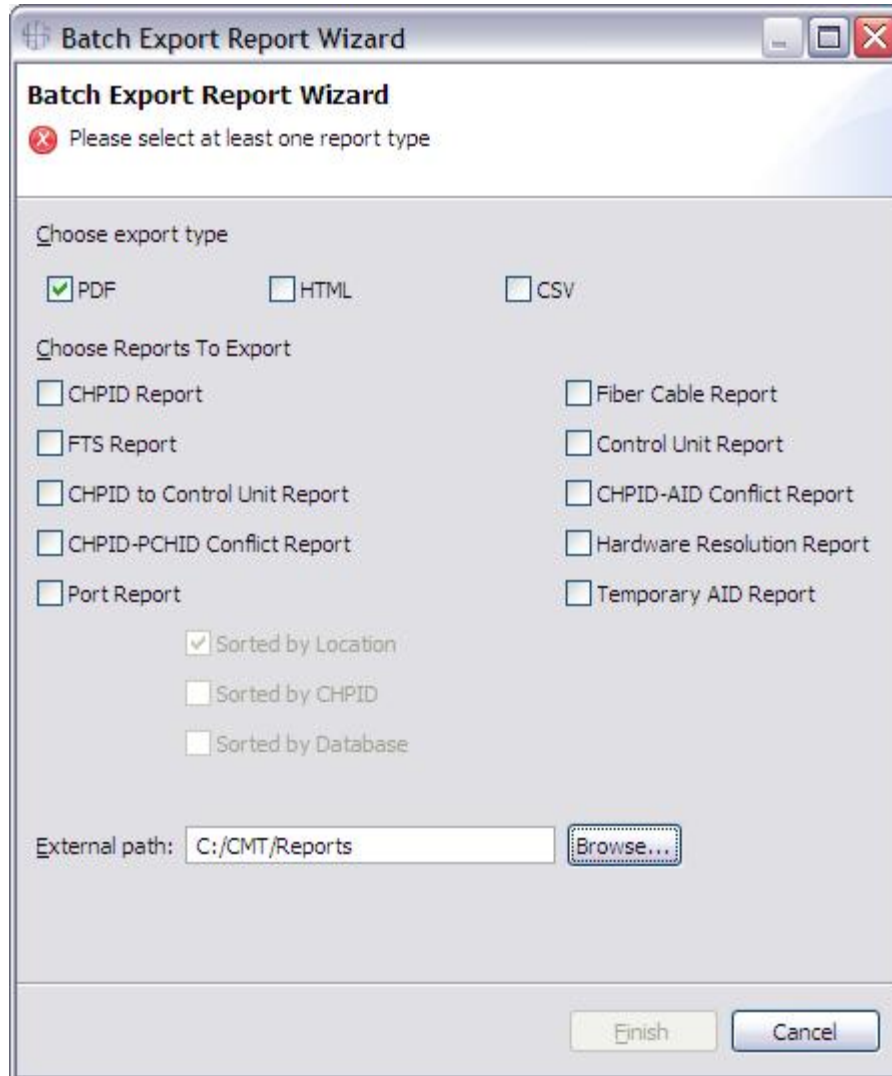
Table 9. Summary of file names of saved report files		
Report	File name saved in workspace folder	Saved outside workspace folder
CHPID Report	chpid.rpt	chpid.rpt.pdf or fn.rpt.html
Port Report	pchid.rpt	pchid.rpt.pdf or pchid.rpt.html
Fiber Cable Report	Fiber Cable.rpt	Fiber Cable.rpt.pdf or Fiber Cable.rpt.html
FTS Report	FTS.rpt	FTS.rpt.pdf or FTS.rpt.html
Control Unit Report	Control Unit.rpt	Control Unit.rpt.pdf or Fiber Control Unit.rpt.html

Table 9. Summary of file names of saved report files (continued)		
Report	File name saved in workspace folder	Saved outside workspace folder
CHPID to Control Unit Report	chpidtocu.rpt	chpidtocu.rpt.pdf or chpidtocu.rpt.html

The tool saves the report and displays the Reports view. See [Figure 132 on page 102](#).

To save multiple reports, perform the following steps:

1. Click **Save Report**. This displays types of reports. [Figure 137 on page 106](#) shows this.
2. Click **Batch Save** under Save Report. The Multi-page Editor File window is displayed. [Figure 137 on page 106](#) shows this.



*Figure 137. Multi-page Editor File window*

3. If you want the CHPID Mapping Tool to export an HTML file rather than a PDF, select **HTML** to change the default.
4. Select the report or reports you want. If you select **Port Report**, additional choices about the sort order become available and you are required to select one.
5. If you want to save reports to a folder other than the default Documents and Settings folder, click **Browse**. This opens the Browse For Folder window where you can create a new folder or select an existing folder; click **OK** when you are done.
6. Click **Finish**.

## Printing Reports

---

Saved reports can be HTML files or PDF files. You are recommended to print all reports. You can use a viewer associated with the file type to print a file. For example, you can print an HTML file from a browser or a PDF file from Adobe Acrobat reader.

**Note:** When you print using Internet Explorer, certain reports, such as CHPID reports and FTS reports, may have page breaks at logical sections.



## Chapter 10. Troubleshooting and support

This chapter provides directions for reporting a problem or submitting a suggestion on the CHPID Mapping Tool through Resource Link and ViewBlue. It also provides a brief list of frequently asked questions (FAQ).

### Submitting a problem or suggestion

You can report a problem or submit a suggestion through Resource Link. Alternately, your IBM representative or IBM business partner can report a problem for you using ViewBlue.

#### Submitting a problem or suggestion with Resource Link

IBM monitors feedback from Resource Link during normal U.S. business hours.

Perform the following steps to submit a problem or suggestion to the tool developers:

1. On the main Resource Link site, click **Feedback** in the navigation bar on the left. This opens the Feedback form, as shown in Figure 138 on page 109.

**IBM**

### Feedback

We welcome your comments about your experience on the Resource Link area of ibm.com. All comments will be read and forwarded to the appropriate area for review. Not all comments will receive a response. For other comments or requests, please use [Contact](#).

The fields indicated with an asterisk are required to complete this form. If you don't wish to provide us with the required information, please use the cancel button to return without submitting feedback.

**Did you achieve your goal?\***  Yes  No

**Comments\***

**Category\*** Accuracy of content  
Broken link  
CHPID Mapping Tool

**First name\*** Ann

**Last name\*** Burkes

**E-mail address\*** burkesam@us.ibm.com

The data may be used to provide you with information from IBM or selected organizations worldwide about products, services, or activities that may be of interest to you.

Please do not use my information collected here for future marketing communications beyond the scope of this transaction.

Figure 138. Feedback form

2. Select CHPID Mapping Tool in the Category list.
3. Enter your comments, **making sure to include the version of the tool you are using** (this is displayed in tool title bar).

4. Complete the fields for first and last names and email address, optionally select the check box regarding information use, and click **Submit**.
5. Save the work in a session file if possible. A session file can be used by the development team to analyze the problem.
6. If Internal Tool Error is encountered, the log file named chpid.log, found in the tool installation directory (usually c:\program files\ibm\chpid) can be sent to the development team for quick resolution, along with the session file, hardware data and IOCP file.

## Submitting a problem with ViewBlue

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For issues outside U.S. business hours, please contact your IBM representative/Business Partner to report the problem using ViewBlue.

The following instruction are for IBM representatives/Business Partners:

1. Open <https://www.ibm.com/ibmlink/feedback>.
2. Open up a feedback to report the problem.
3. Click **Report a problem**.
4. Identify the subject of the feedback as **Configurators**.
5. Select eConfig.

**Note:** Users who do not have access to ViewBlue can open up a feedback from the eConfig application.

## Frequently asked questions (FAQ)

---

**Q:** Why do I get the following error message while importing a CFReport?

CHPID Mapping Tool could not identify the I/O device with the following feature codes: *n n...*

This might be due to modifications of the CFReport, or the version of the CHPID Mapping Tool being not current. If so please download the latest version before trying to load

**A:** The tool maintains a list of feature codes. It is possible for the CFReport to include recently introduced feature codes that the installed version of the tool does not yet support. If the installed version is not the latest, you should download the latest upgrade of the tool from the Resource Link website. If the error still occurs, you should contact support.

**Q:** How do I find the version of the installed tool?

**A:** After you start the tool, you can display the version by clicking: **Help > About**.

**Q:** When I load a session file, why does the tool display a window with the following message?

Tool has detected a more recent saved session.  
This is because the CHPID Mapping Tool periodically saves changes to a separate session file to avoid productivity loss from desktop or application failures.  
If you exit the tool or a desktop or application failure occurs before you save the latest changes to a session file, then the automatically saved session file is newer than your session file.  
Alternately you might not want to save some changes.

Do you want to load the automatically saved session file?

**A:** The tool has an autosave feature that periodically saves changes to a separate session file to avoid productivity loss from desktop or application failures. If you exit the tool or a desktop or application failure occurs before you save the latest changes to a session file, the tool displays this message to inform you that the tool detects an autosaved file for the same CCN with later changes. You can load the auto saved file to recover lost changes.

**Q:** How do I know if a CHPID is spanned in the **Manual** page?

**A:** Spanned CHPIDs are displayed in bold text in the CHPID table.



## Appendix A. An explanation of configuration files

The following information applies if you are performing:

- An upgrade (for example, from a z990 to a z9 EC)
- A MES for a z10 EC, z10 BC, z9 EC, or z9 BC to another z10 EC, z10 BC, z9 EC, or z9 BC.

On the z890 and z990, customization information is stored in files on the SE. The files are called configuration files (or 'config files'), and they are named based on the PCHID value (physical location) of the channel. The following table lists channel or CHPID types that have config files on a z10 EC, z10 BC, z9 EC, z9 BC, z990, or z890 and the kind of information stored in these files:

<b>Channel or CHPID type</b>	<b>Information stored in configuration files</b>
OSA-Express2 or OSA-Express3	Any user specified MAC addresses and OAT tables
1000BaseT channel defined as CHPID type OSC	Console session information

The following is true for an upgrade (for example, from a z990 to a z10 EC) or an MES (for example, for a z10 EC, z10 BC, z9 EC, or z9 BC). If channels or CHPIDs have associated configuration files, the CHPID Mapping Tool can assign PCHIDs to your logical CHPID definitions or move a CHPID definition to a new location. This can occur regardless of whether channels are moving. The CHPID Mapping Tool can override PCHID assignments for the following channels supporting CHPID type OSC, OSD, OSE, and OSN:

- OSA Express3
  - 3362
  - 3363
  - 3367
  - 3369
  - 3370
  - 3371
  - 3373
- OSA Express2
  - 3364
  - 3365
  - 3366
  - 3367
  - 3368
- OSA Express
  - 1364
  - 1365
  - 1366
  - 2364
  - 2365
  - 2366

The following explains how the system preserves the config files on an upgrade (for example, from a z990 to a z9 EC). However, it is ultimately your responsibility to have a record or backup of the customization data stored in config files. You should always make a backup record:

- For OSA-Express2 and OSA-Express-3 channels, record all user-assigned MAC addresses using the **Display or alter MAC address** function in **Card specific advanced facilities** or user-specified OSA Address Tables (OAT).

**Note:** If you are an OSA/SF user, a better method is to use OSA/SF to back up and restore the configuration information for your OSA-Express2 and OSA-Express-3 channels.

- For CHPID type OSC (OSA-ICC), use the **Export source file** function in **Manual configuration options**.

For an upgrade (for example, from a z990 to a z9 EC), most of the existing channels cards to move from the old machine to the new machine are rebalanced to take advantage of the availability characteristics of the new machine. This rebalancing also takes into consideration any new channels that may be added as part of the upgrade. The configurator creates machine configuration data and reports that contain information on which PCHIDs have been relocated.

The information contained in the configurator data is used to create a file that the service representative uses as part of the installation (or MES) activities of the new z10 EC, z10 BC, z9 EC, or z9 BC. This file supports the relocation for channel types that have specific files containing customization data.

It is important that the file names containing the customization data be renamed to the new PCHID value. As part of the installation (or MES) process, the service representative is presented with a window (Migrate Channel Configuration Files) that shows the movement of PCHIDs based on the information contained in the manufacturing-provided file. This function provides the capability to automatically rename the files so that they reflect the new PCHID values (so that the customization data is not lost and follows the physical movement for those cards). If you used the CHPID Mapping Tool to perform the CHPID to PCHID assignments (a process that is recommended), then the service representative need only accept the values on the window and the files are copied correctly. On the windows displayed, the service representative can change the "TO" PCHID during this process.

This can accommodate those customers who choose not to do not follow the recommendations (those who do not use the CHPID Mapping Tool or who override the CHPID Mapping Tool default assignments). If the customer and service representative team preplan and develop their own from-to-PCHID list, manual entry can be used to override the file.

It is strongly recommended that you use the CHPID Mapping Tool to configure the CHPID to PCHID assignments because the tool ensures that logical CHPIDs are assigned to the new PCHID values. The tool has been changed to handle the previously described issues. When the appropriate files have been loaded into the tool (that is, CFReport file and IOCP file with PCHID assignments for the z990 or for the current z10 EC, z10 BC, z9 EC, or z9 BC if this is an MES to a z10 EC, z10 BC, z9 EC, or z9 BC), the tool assigns new PCHID values to those affected CHPIDs based solely on the physical movement of the channel cards. If you use the manual mode, these PCHIDs have an identifier ('Config File'). You are not recommended to change that these assignments.

You are recommended to use automatic mapping rather than manual mapping for most of your mapping needs. If you use the automatic mapping, the CHPID Mapping Tool protects any CHPID/PCHIDs that have been assigned because of config files unless you direct it not to do so. The following outlines the process:

1. You click **Automatic Mapping**. The tool displays the Reset CHPID Assignments window. This window includes three or four options. The fourth option is **Reset CHPIDs assigned by CMT for config files**. The tool displays this option only if the CHPID Mapping Tool reset assignments for an upgrade or an MES. (Figure 86 on page 70) shows an example of the Reset CHPID Assignments window, but this example does not include the fourth option.)
2. You select one or more of the options. You are recommended *not* to select **Reset CHPIDs assigned by CMT for config files**.
  - If you select **Reset CHPIDs assigned by CMT for config files**, the tool resets CHPID Mapping Tool assignments for config files.
  - If you select any options other than **Reset CHPIDs assigned by CMT for config files**, the tool does not reset config file assignments. It protects any CHPID/PCHIDs that have assigned through config files.
- 3.

After you run automatic mapping and review the intersections, if you believe the config file assignments are causing unacceptable intersections, you are recommended to use manual mapping to reset only those config file assignments that are causing the unacceptable intersections. Remember it is your responsibility to have backed up the customization data (and to restore it to the PCHID to which the logical CHPID has been assigned).

After you have completed working with the CHPID Mapping Tool, one of the available reports will identify all the CHPIDs that have new PCHID values. A subset of these may have had config files associated with the old PCHIDs. The service representative can use this report to verify or change the **to** column of the **Migrate Channel Configuration Files** window.

The use of the mapping tool is highly recommended for this migration because it ensures the logical CHPIDs are assigned to the new PCHID values. The IOCP file (for the machine being upgraded) that is input to the CHPID Mapping Tool must contain the current CHPID to PCHID assignments for the CHPID Mapping Tool to perform the function as previously described.



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### Avis de conformité à la réglementation d'Industrie Canada

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European Community contact:  
IBM Deutschland GmbH  
Technical Regulations, Department M372  
IBM-Allee 1, 71139 Ehningen, Germany  
Tele: +49 (0) 800 225 5423 or +49 (0) 180 331 3233  
email: halloibm@de.ibm.com

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回路分類：6（単相、PFC回路付）

換算係数：0

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Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:  
International Business Machines Corp.  
New Orchard Road  
Armonk, New York 10504  
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:  
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снижения которых необходимы дополнительные меры**

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