



System z9

# Stand-Alone Input/Output Configuration Program User's Guide

SB10-7152-01







System z9

# Stand-Alone Input/Output Configuration Program User's Guide

SB10-7152-01

**Note**

Before using this information and the product it supports, be sure to read the general information under “Safety Notices” on page v and Appendix D, “Notices,” on page D-1.

**Second Edition (May 2006)**

- | This edition, SB10-7152-01, applies to IBM® System z9™ processors. This edition replaces SB10-7152-00. A technical change to the text or illustration is indicated by a vertical line to the left of the change.
- | There may be a newer version of this document in PDF format available on Resource Link™. Go to <http://www.ibm.com/servers/resourcelink> and click on Library on the navigation bar. A newer version is indicated by a lower case alphabetic letter following the form number suffix. For example: 00a, 00b, 01a, 01b.

© Copyright International Business Machines Corporation 2005, 2006. All rights reserved.

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

---

# Contents

|                                                                     |         |
|---------------------------------------------------------------------|---------|
| <b>Safety and Environmental Notices</b>                             | v       |
| Safety Notices                                                      | v       |
| World Trade Safety Information                                      | v       |
| Laser Safety Information                                            | v       |
| Laser Compliance                                                    | v       |
| Environmental Notices                                               | v       |
| Product Recycling and Disposal                                      | v       |
| Refrigeration                                                       | vi      |
| Battery Return Program                                              | vii     |
| IBM Cryptographic Coprocessor Card Return Program                   | vii     |
| <br><b>Summary of changes</b>                                       | <br>ix  |
| <br><b>Preface</b>                                                  | <br>xi  |
| Who Should Use This Book                                            | xi      |
| How This Book is Organized                                          | xi      |
| What You Should Know                                                | xi      |
| Terms Used in this Book                                             | xii     |
| I/O Devices                                                         | xii     |
| I/O Configuration Data Set (IOCDS)                                  | xii     |
| I/O Configuration Program (IOCP)                                    | xii     |
| I/O Configuration Source (IOCS)                                     | xii     |
| How to Send your Comments                                           | xii     |
| <br><b>Chapter 1. Introducing the Input/Output Configuration</b>    | <br>1-1 |
| What Is the I/O Configuration Process                               | 1-2     |
| When is the Stand-Alone Version of IOCP Needed?                     | 1-2     |
| What Can the Stand-Alone Version of IOCP Do?                        | 1-2     |
| How to Start the I/O Configuration Process                          | 1-3     |
| How to Determine the IOCP Release Level                             | 1-4     |
| I/O Configuration Source Files                                      | 1-4     |
| Starter I/O Configuration Data Sets                                 | 1-4     |
| Description of a Stand-Alone Build of an IOCDS                      | 1-5     |
| <br><b>Chapter 2. Understanding the Stand-Alone Version of IOCP</b> | <br>2-1 |
| Controlling the Program                                             | 2-2     |
| Navigating the I/O Configuration Panels                             | 2-4     |
| Using the I/O Configuration Program Options                         | 2-6     |
| Enable Write Protection                                             | 2-7     |
| Disable Write Protection                                            | 2-7     |
| Copy Configuration                                                  | 2-8     |
| Export Source File                                                  | 2-8     |
| Import Source File                                                  | 2-10    |
| Open Source File                                                    | 2-11    |
| Delete Source File                                                  | 2-16    |
| Print Data Set Report                                               | 2-16    |
| Build Data Set                                                      | 2-18    |
| Disassemble Data Set                                                | 2-21    |
| Exit                                                                | 2-22    |
| Using the I/O Configuration Program View Actions                    | 2-22    |
| Channel Path Configuration                                          | 2-22    |
| Partition Images Configured                                         | 2-28    |
| Dynamic Information                                                 | 2-28    |

|                                                                                  |            |
|----------------------------------------------------------------------------------|------------|
| Configuration Program Level . . . . .                                            | 2-29       |
| Supported I/O Mask . . . . .                                                     | 2-30       |
| IOCP Wait State Codes . . . . .                                                  | 2-31       |
| Enabled Wait States . . . . .                                                    | 2-31       |
| Disabled Wait States . . . . .                                                   | 2-31       |
| <b>Chapter 3. Running the Stand-Alone Version of IOCP . . . . .</b>              | <b>3-1</b> |
| Preparing for System Installation . . . . .                                      | 3-2        |
| If the I/O Configuration Source Is Available at Installation Time... . . . .     | 3-2        |
| If the I/O Configuration Source is NOT Available at Installation Time... . . . . | 3-2        |
| Building an Input/Output Configuration Data Set . . . . .                        | 3-3        |
| Power-on Reset for IOCDS Import/Build . . . . .                                  | 3-3        |
| Import an I/O Configuration Source File . . . . .                                | 3-5        |
| Build the IOCDS . . . . .                                                        | 3-8        |
| Power-on Reset to Enable the IOCDS . . . . .                                     | 3-10       |
| Creating a New IOCDS in a New Central Processor Complex . . . . .                | 3-10       |
| Updating an IOCDS Using the Card-Image Input Editor . . . . .                    | 3-11       |
| <b>Appendix A. Configuration Examples . . . . .</b>                              | <b>A-1</b> |
| <b>Appendix B. Resolving IOCP Errors . . . . .</b>                               | <b>B-1</b> |
| An Error Example . . . . .                                                       | B-1        |
| Explanation of Errors in Example . . . . .                                       | B-2        |
| <b>Appendix C. Stand-Alone IOCP Support Element Messages . . . . .</b>           | <b>C-1</b> |
| <b>Appendix D. Notices . . . . .</b>                                             | <b>D-1</b> |
| Trademarks and Service Marks . . . . .                                           | D-2        |
| Electronic Emission Notices. . . . .                                             | D-2        |
| <b>Index . . . . .</b>                                                           | <b>X-1</b> |

---

# Safety and Environmental Notices

---

## Safety Notices

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.

There are no **DANGER** notices in this guide.

## World Trade Safety Information

Several countries require the safety information contained in product publications to be presented in their national languages. 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 safety information in your national language with references to the US English source. Before using a US English publication to install, operate, or service this IBM product, you must first become familiar with the related safety information in the booklet. 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

All System z models can use I/O cards such as PCI adapters, ESCON, FICON, Open Systems Adapter (OSA), InterSystem Coupling-3 (ISC-3), or other I/O features which are fiber optic based and utilize lasers or LEDs.

## Laser Compliance

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

### **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)**

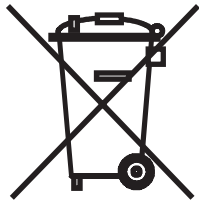
---

## Environmental Notices

### Product Recycling and Disposal

This unit must be recycled or discarded according to applicable local and national regulations. IBM encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. IBM offers a variety of product return programs and services in several countries to assist

equipment owners in recycling their IT products. Information on IBM product recycling offerings can be found on IBM's Internet site at <http://www.ibm.com/ibm/environment/products/prp.shtml>.



**Notice:** This mark applies only to countries within the European Union (EU) and Norway.

Appliances are labeled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to various products to indicate that the product is not to be thrown away, but rather reclaimed upon end of life per this Directive.

In accordance with the European WEEE Directive, electrical and electronic equipment (EEE) is to be collected separately and to be reused, recycled, or recovered at end of life. Users of EEE with the WEEE marking per Annex IV of the WEEE Directive, as shown above, must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to customers for the return, recycling, and recovery of WEEE. Customer participation is important to minimize any potential effects of EEE on the environment and human health due to the potential presence of hazardous substances in EEE. For proper collection and treatment, contact your local IBM representative.

注意：このマークは EU 諸国およびノルウェーにおいてのみ適用されます。

この機器には、EU 諸国に対する廃電気電子機器指令 2002/96/EC(WEEE) のラベルが貼られています。この指令は、EU 諸国に適用する使用済み機器の回収とリサイクルの骨子を定めています。このラベルは、使用済みになった時に指令に従って適正な処理をする必要があることを知らせるために種々の製品に貼られています。

Remarque : Cette marque s'applique uniquement aux pays de l'Union Européenne et à la Norvège.

L'étiquette du système respecte la Directive européenne 2002/96/EC en matière de Déchets des Equipements Electriques et Electroniques (DEEE), qui détermine les dispositions de retour et de recyclage applicables aux systèmes utilisés à travers l'Union européenne. Conformément à la directive, ladite étiquette précise que le produit sur lequel elle est apposée ne doit pas être jeté mais être récupéré en fin de vie.

## Refrigeration

These systems contain a modular refrigeration unit with R-134A refrigerant and a polyol ester oil. This refrigerant must not be released or vented to the atmosphere. Skin contact with refrigerant may cause frostbite. Wear appropriate eye and skin protection. Modular refrigeration units are sealed and must not be opened or maintained.

## Battery Return Program

This product may contain sealed lead acid, nickel cadmium, nickel metal hydride, lithium, or lithium ion battery(s). Consult your user manual or service manual for specific battery information. The battery must be recycled or disposed of properly. Recycling facilities may not be available in your area. For information on disposal of batteries outside the United States, go to <http://www.ibm.com/ibm/environment/products/batteryrecycle.shtml> or contact your local waste disposal facility.

In the United States, IBM has established a return process for reuse, recycling, or proper disposal of used IBM sealed lead acid, nickel cadmium, nickel metal hydride, and other battery packs from IBM Equipment. For information on proper disposal of these batteries, contact IBM at 1-800-426-4333. Please have the IBM part number listed on the battery available prior to your call.

In Taiwan, the following applies:



Please recycle batteries 廢電池請回收

## IBM Cryptographic Coprocessor Card Return Program

This machine may contain an optional feature, the cryptographic coprocessor card, which includes a polyurethane material that contains mercury. Please follow Local Ordinances or regulations for disposal of this card. IBM has established a return program for certain IBM Cryptographic Coprocessor Cards. More information can be found at <http://www.ibm.com/ibm/environment/products/prp.shtml>.

برنامچ ارجاع كرت IBM Cryptographic Coprocessor

هذه الماكينة قد تحتوي على خاصية اختيارية، وهي كارت

Cryptographic Coprocessor

والتي تحتوي على مادة بوليوريثين التي تحتوي على الزئبق

رجاء اتباع القوانين أو التعليمات المحلية للتخلص من هذا الكارت .

قامت شركة IBM باعداد برنامج لارجاع بعض كروت IBM Cryptographic

Coprocessor

لمزيد من المعلومات، رجاء زيارة الموقع

<http://www.ibm.com/ibm/environment/products/prp.shtml>



---

## Summary of changes

### **Summary of Changes for SB10-7152-01 System z9 Stand-Alone Input/Output Configuration Program User's Guide**

This revision contains technical and editorial changes.

#### ***New Information:***

- The System z9 Enterprise Class (z9™ EC) was formerly the System z9 109.
- The System z9 Business Class (z9 BC) has been added.



---

## Preface

This document is intended to help anyone who will use the stand-alone input/output configuration program (IOCP) on an IBM System z9 system. Stand-alone IOCP supports the following System z9 processors:

- z9 Business Class (z9 BC)
- z9 Enterprise Class (z9 EC).

Figures of support element (SE) windows are displayed throughout this document. They are displayed to help you recognize the information that you will see while performing the procedures in this manual. The information displayed in the figures of the SE windows may not match what is displayed on your system. Always use the instructions and data displayed on your system.

---

## Who Should Use This Book

This book is intended for anyone using stand-alone IOCP to create Input/Output configuration data set (IOCDS) files. You can use the information in this document to create an initial I/O configuration source file (card-image statements) or to update existing files. It is written for both first-time data processing users and experienced users, including system planners and administrators.

**Read the manual in its order of presentation. Then follow the procedures in Chapter 2, “Understanding the Stand-Alone Version of IOCP,” on page 2-1 sequentially, to minimize the possibility of error when creating your I/O configuration data set.**

---

## How This Book is Organized

Chapter 1, “Introducing the Input/Output Configuration,” on page 1-1.

- Gives an overview of the I/O configuration program (IOCP)
- Describes the IOCP Options (File actions) in detail
- Describes the IOCP View actions
- Lists the type of IOCP procedures
- Explains how an I/O configuration data set (IOCDS) is built
- Lists Wait State codes.

Chapter 2, “Understanding the Stand-Alone Version of IOCP,” is a step-by-step procedure for creating an initial IOCDS for new system installations.

Chapter 3, “Running the Stand-Alone Version of IOCP,” provides examples of various configurations.

Appendix B, “Resolving IOCP Errors,” provides instructions for resolving errors.

## What You Should Know

You must have a basic knowledge of IOCP tasks to use this manual effectively.

### Important

For IOCP statement syntax, detailed error message descriptions, I/O device and control unit parameters, ESCON<sup>®</sup> channel examples, and IOCP instructions for specific operating systems (OS/390<sup>®</sup>, z/OS<sup>®</sup>, z/OS.e, z/VM<sup>®</sup>, VSE/ESA<sup>™</sup>, and z/VSE<sup>™</sup>), see *Input/Output Configuration Program User's Guide*, SB10-7037.

### Additional Information

More detailed information can be found in the following System z9 system documents:

- For information on how to use the interface, see:
  - *Hardware Management Console Guide*
  - *Support Element Operations Guide*.

---

## Terms Used in this Book

The following lists terms used when configuring the channels.

### I/O Devices

The I/O devices are the input/output controllers and devices that attach to a standard channel for the System z9 processor.

### I/O Configuration Data Set (IOCDS)

The IOCDS defines the configuration of I/O devices on the system to the licensed internal code used by the channels. The IOCDS is stored on the support element. Only one IOCDS can be used during system activation, but up to four IOCDSs can be defined.

### I/O Configuration Program (IOCP)

The IOCP is a stand-alone utility on the support element that creates the IOCDS for the System z9 processor. The input to the IOCP is the I/O configuration source file.

### I/O Configuration Source (IOCS)

The I/O configuration source file is input to the IOCP when an IOCDS is created. The I/O configuration source is an 80-column card-image, and is initially provided in ASCII format. The file is then “imported” to the support element hard disk. It is the customer's responsibility to create the I/O configuration source; however, the service representative can edit the file to correct errors.

---

## How to Send your Comments

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. 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 or table number).

---

## Chapter 1. Introducing the Input/Output Configuration

|                                                           |     |
|-----------------------------------------------------------|-----|
| What Is the I/O Configuration Process . . . . .           | 1-2 |
| When is the Stand-Alone Version of IOCP Needed? . . . . . | 1-2 |
| What Can the Stand-Alone Version of IOCP Do? . . . . .    | 1-2 |
| How to Start the I/O Configuration Process . . . . .      | 1-3 |
| How to Determine the IOCP Release Level . . . . .         | 1-4 |
| I/O Configuration Source Files . . . . .                  | 1-4 |
| Starter I/O Configuration Data Sets . . . . .             | 1-4 |
| Description of a Stand-Alone Build of an IOCDS . . . . .  | 1-5 |

---

## What Is the I/O Configuration Process

All CPCs require input describing how their I/O channels and devices are configured. You must supply this information in a source file known as the *Input/Output Configuration Source (IOCS)*. The IOCS contains detailed information for each channel path assignment, each control unit, and each device. For information on the source file statement syntax and content, see the *Input/Output Configuration Program User's Guide*, SB10-7037.

The system programmer can create the IOCS in advance and save it on a diskette or hard drive in a PC file (in ACSII format). The IOCS can also be created or altered using the editor that the stand-alone *Input/Output Configuration Program (IOCP)* provides on the support element.

The I/O Configuration Program uses the IOCS to create an *Input/Output Configuration Data Set (IOCDS)*. The processor uses the IOCDS during power-on reset to tell the I/O subsystem how the I/O is configured. Four possible I/O configurations (four IOCSs and four corresponding IOCDSs) are available for a normal power-on reset; a fifth data set D0 is available for diagnostic procedures.

---

## When is the Stand-Alone Version of IOCP Needed?

The stand-alone version of IOCP is needed *only*:

- When you generate (**Build**) an I/O configuration data set during initial installation
- If your operating system does not have a batch version of IOCP
- If you want to change the I/O configuration and do not have one of the following operating systems operational:
  - OS/390
  - VSE/ESA
  - z/OS
  - z/OS.e
  - z/VM
  - z/VSE.

### Notes:

1. If, after system installation and activation, you are operating with either the OS/390, z/OS, z/OS.e, z/VM, z/VSE, or VSE/ESA system control program, you can use the batch version of IOCP to make IOCDS changes. The advantage of the batch version of IOCP is that it will not disrupt system processing as does the stand-alone version of IOCP.
2. The Hardware Configuration Definition (HCD) is an OS/390, z/OS, z/OS.e, and z/VM application that aids in the definition of the I/O configuration and in the distribution of the appropriate I/O definition to the appropriate CPCs. The Hardware Management Console, configured as a change management focal point with LIC changes enabled, assists the HCD in finding the names of all defined CPCs. A single HCD then distributes the appropriate IOCDS to the various CPCs.

---

## What Can the Stand-Alone Version of IOCP Do?

Using the stand-alone version of IOCP, you can:

- **Create a new IOCDS** from scratch during the installation of a new processor complex, if an I/O configuration source file (card-image input statements) is not available.
- **Update an IOCDS** on an existing processor. In some cases where the source file was not saved or if you are unsure of the source, you can select the **Disassemble Data Set** action.
- **Disassemble Data Set** gets an equivalent source deck from an existing IOCDS.
- **Replace an IOCDS** in a processor complex if card-image input is available from one of the supported import devices.

---

## How to Start the I/O Configuration Process

The stand-alone version of IOCP is shipped with the processor as part of the Licensed Internal Code (LIC). The stand-alone program lets you define the I/O configuration to the system before a control program is installed.

Perform the following steps to access all actions available on the **Input/Output Configuration** window:

1. Log on the support element in either the system programmer or service user role. You can log on the support element directly or use the **Single object operation** task on the Hardware Management Console to operate the support element.
2. Perform a power-on reset of the processor and activate a logical partition with a minimum of 128MB of storage (MB equals 1 048 576 bytes).

### Notes:

- a. Certain actions require an activated partition and the completion of a power-on reset of the CPC. This step is, therefore, required to make all actions available.
  - b. To use the stand-alone IOCP on a coupling facility, perform a power-on reset with the Diagnostic IOCDS (D0) and activate a logical partition. IOCP can run only in a logical partition activated for ESA/390 mode.
3. From the **Support Element Workplace** window, open **Task List** from **Views**.
  4. Open **CPC Configuration** from the **Task List Work Area**.
  5. Open **Groups** from **Views**.
  6. Open **Images** from **Groups Work Area**, and then select an Image icon.

**Note:** Certain actions require a power-on reset and the selection of an image. If you select an image, you can perform any of the functions on the **Input/Output Configuration** window. See Note 1 on page 2-7 for more detailed information.

7. Open **Input/Output (I/O) Configuration** under **CPC Configuration**. You can now perform any of the functions available on the **Input/Output Configuration** window.

You may need to use other documents to create the I/O configuration source (IOCS) **before** using this document.

- The stand-alone program uses the *object-action* user interface and is designed for use with a keyboard or a mouse. If you are not familiar with using menu bars, a mouse, or the System z9 processor console interface, refer to:
  - *Support Element Operations Guide*
  - *Hardware Management Console Guide*.

- For IOCP statement syntax, detailed error message descriptions, and IOCP instructions for running the batch IOCP with specific operating systems (for example, z/OS and VM), see:
  - *Input/Output Configuration Program User's Guide*, SB10-7037

The stand-alone version of IOCP does **not** have I/O recovery capability. I/O error conditions cause IOCP to terminate.

## How to Determine the IOCP Release Level

To determine the IOCP release level installed on your support element, perform the following steps:

1. Perform Steps 1 through 7 on page 1-3.
2. From the **Input/Output Configuration** window, select the **View** pull-down.
3. Select **Configuration Program Level**.
4. Read the version/release/level of the IOCP licensed internal code installed on this system.

## I/O Configuration Source Files

Stand-alone IOCP removes any comment card that begins with **\*ICP** or **\*IYP**. Stand-alone IOCP uses **\*ICP** comments for IOCP messages. Therefore, when Building an IOCDs, stand-alone IOCP removes these IOCP messages so the resultant IOCS file contains only IOCP messages from the selected function.

IOCS files can contain a maximum number of 256,000 source card records. Twenty additional records are reserved for IOCP messages.

If you Build an IOCDs and the resultant IOCS file is too big, IOCP removes IOCP messages from the IOCS file to reduce its size until it is small enough to be written.

If an IOCP function fails due to space constraints or if IOCP messages were removed from the IOCS file, you can reduce the size of the IOCS file you selected and then retry the IOCP function. To reduce the size of an IOCS file, perform one or more of the following:

- Remove comment cards from an IOCS file.
- Consolidate IOCP statements that are continued across multiple cards onto a minimum number of cards.
- Combine individual IODEVICE statements that attach to the same control units by using common UNIT and MODEL keyword values. Do not combine IODEVICE statements if they have conflicting keyword values.

**Note:** For small size and efficiency, the preceding can also be done for any IOCS file, not only for IOCS files that are too big.

## Starter I/O Configuration Data Sets

The system can have four I/O configurations available to the user. There are four user I/O configuration data sets (IOCDs) shipped with the machine, called *starter data sets*, plus a diagnostic configuration data set that service representatives use. The starter data sets are provided as examples only and are not intended to match of the customer's actual I/O configuration.

The system must be power-on reset, and a logical partition must be activated before running the stand-alone IOCP.

You can view the contents of the starter data sets by using the **Open Source File** menu item on the **Options** drop-down menu on the *Input/Output Configuration* window's menu bar.

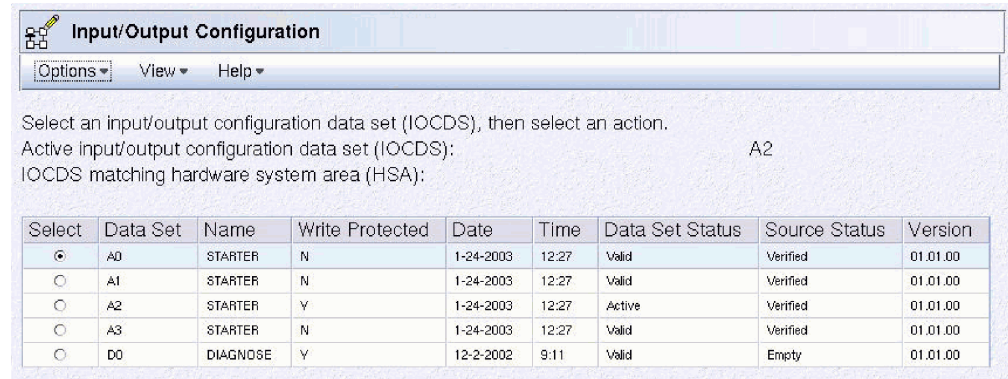


Figure 1-1. Input/Output Configuration Window

The IOCDs shipped with the machine are:

- The A0, A1, A2, and A3 **STARTER** configuration data sets.
- The D0 **DIAGNOSE** configuration data set, which is used for diagnostic testing.
  - D0 puts all channels in a simulation mode. No external I/O can be accessed when the system has been power-on reset using this IOCDs.
  - The stand-alone IOCP can be run after a power-on reset using D0.
  - IPL cannot be performed for operating systems if D0 was used at power-on reset.

## Description of a Stand-Alone Build of an IOCDs

IOCP performs the following steps when you specify that you want to generate or build an IOCDs using the **Build Data Set** action.

1. The support element resets the targeted logical partition (System Reset Clear). The logical partition must be activated with I/O Configuration Control Authority enabled through its activation profile.
2. The support element loads the stand-alone IOCP into the targeted logical partition's storage and starts the program.
3. IOCP reads the entire source file from the support element.

**Note:** IOCP Steps 4 through 5 are repeated for each input statement.

4. IOCP checks the syntax of each statement for correct format. If a syntax error is found (such as a missing parenthesis), IOCP inserts an error message in the card-image file following the statement that contains the error. IOCP stops checking the syntax of a statement when it encounters the first syntax error on that statement. Therefore, if there are two or more syntax errors on a single statement, the second and following errors are found on subsequent runs of IOCP.

If IOCP finds an error in Step 4, it performs steps 4 and 5 for the remainder of the statements and then continues with Step 9.

5. IOCP checks the validity of each statement. For example, IOCP checks that a CNTLUNIT statement has specified a channel path that has been previously defined in a CHPID statement. If an error is found, IOCP inserts an error message in the card-image file following the statement that contains the error.

If IOCP finds an error in Step 5 on page 1-5, IOCP returns to Step 4 on page 1-5 and performs only Steps 4 on page 1-5 and 5 on page 1-5 for the remainder of the statements and then continues with Step 9.

6. After all of the input statements have been processed, IOCP generates the IOCDS and makes additional checks. For example, IOCP checks that the maximum number of control unit headers is not exceeded. If IOCP finds an error, IOCP inserts an error message at the end of the card-image file and continues with Step 9.
7. IOCP produces IOCP configuration reports of the IOCDS generated.
8. IOCP writes the IOCDS file to the support element if no errors were found.
9. IOCP writes the source file to the support element. If errors were detected, error messages are embedded in the source file. Even if the build was successful, warning messages may be embedded in the source file. Any warning messages should be reviewed before using the IOCDS.
10. The support element ends the IOCP program. (Note that starting up the IOCP code after this point will cause IOCP to put the processor in a B20 hard wait state.)

---

## Chapter 2. Understanding the Stand-Alone Version of IOCP

|                                                            |      |
|------------------------------------------------------------|------|
| Controlling the Program . . . . .                          | 2-2  |
| Navigating the I/O Configuration Panels . . . . .          | 2-4  |
| Input/Output Configuration Panel . . . . .                 | 2-5  |
| Using the I/O Configuration Program Options . . . . .      | 2-6  |
| Enable Write Protection . . . . .                          | 2-7  |
| Disable Write Protection . . . . .                         | 2-7  |
| Copy Configuration . . . . .                               | 2-8  |
| Export Source File . . . . .                               | 2-8  |
| Import Source File . . . . .                               | 2-10 |
| Open Source File . . . . .                                 | 2-11 |
| Using the Editor. . . . .                                  | 2-12 |
| Delete Source File . . . . .                               | 2-16 |
| Print Data Set Report. . . . .                             | 2-16 |
| Build Data Set . . . . .                                   | 2-18 |
| Disassemble Data Set . . . . .                             | 2-21 |
| Exit . . . . .                                             | 2-22 |
| Using the I/O Configuration Program View Actions . . . . . | 2-22 |
| Channel Path Configuration . . . . .                       | 2-22 |
| Channel Subsystem information . . . . .                    | 2-23 |
| CHPID information . . . . .                                | 2-24 |
| Control Unit and Device Information . . . . .              | 2-24 |
| Image Candidate List . . . . .                             | 2-27 |
| Image Access List . . . . .                                | 2-27 |
| Partition Images Configured . . . . .                      | 2-28 |
| Dynamic Information . . . . .                              | 2-28 |
| Configuration Program Level . . . . .                      | 2-29 |
| Supported I/O Mask . . . . .                               | 2-30 |
| IOCP Wait State Codes . . . . .                            | 2-31 |
| Enabled Wait States . . . . .                              | 2-31 |
| Disabled Wait States . . . . .                             | 2-31 |

## Controlling the Program

The stand-alone version of IOCP is started and controlled from the support element. To enter the stand-alone version of the IOCP program:

1. You must be logged on the support element in the system programmer or service representative role, and the CPC must be power reset with one logical partition activated.
2. Open the **Task List** from the **Views** area (see Figure 2-1).

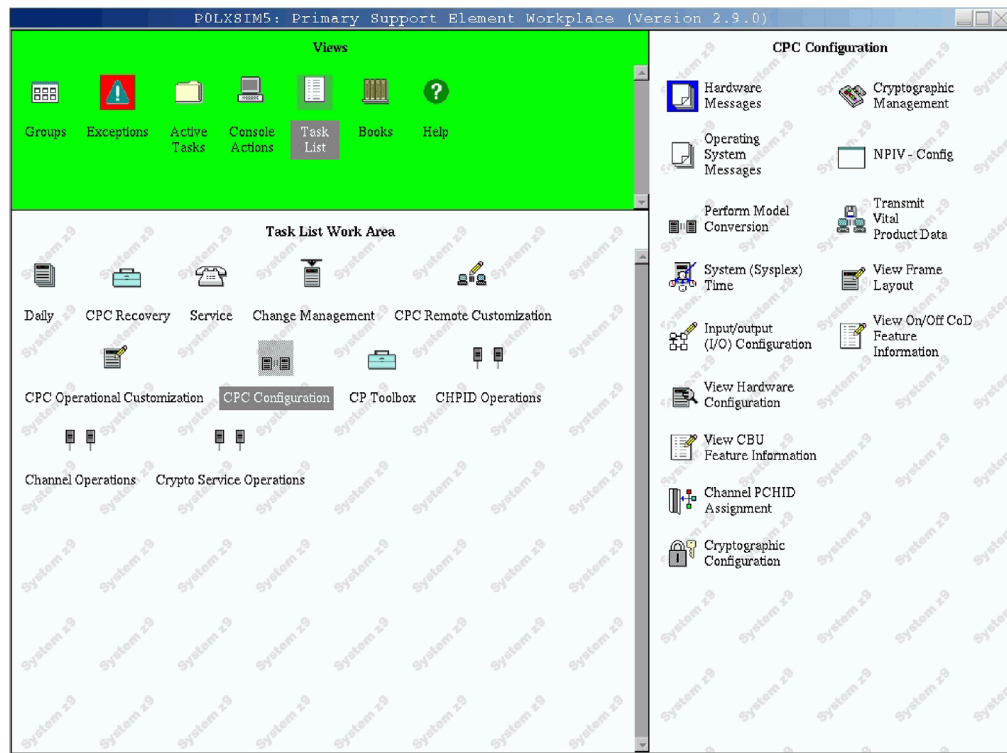


Figure 2-1. Support Element Workplace - Opening CPC Configuration Tasks List

3. Open **CPC Configuration** from the **Task List Work** area.  
The **CPC Configuration** task list contains the **Input/Output (I/O) Configuration** task that you will start.
4. Open **Groups** from **Views** (see Figure 2-2).

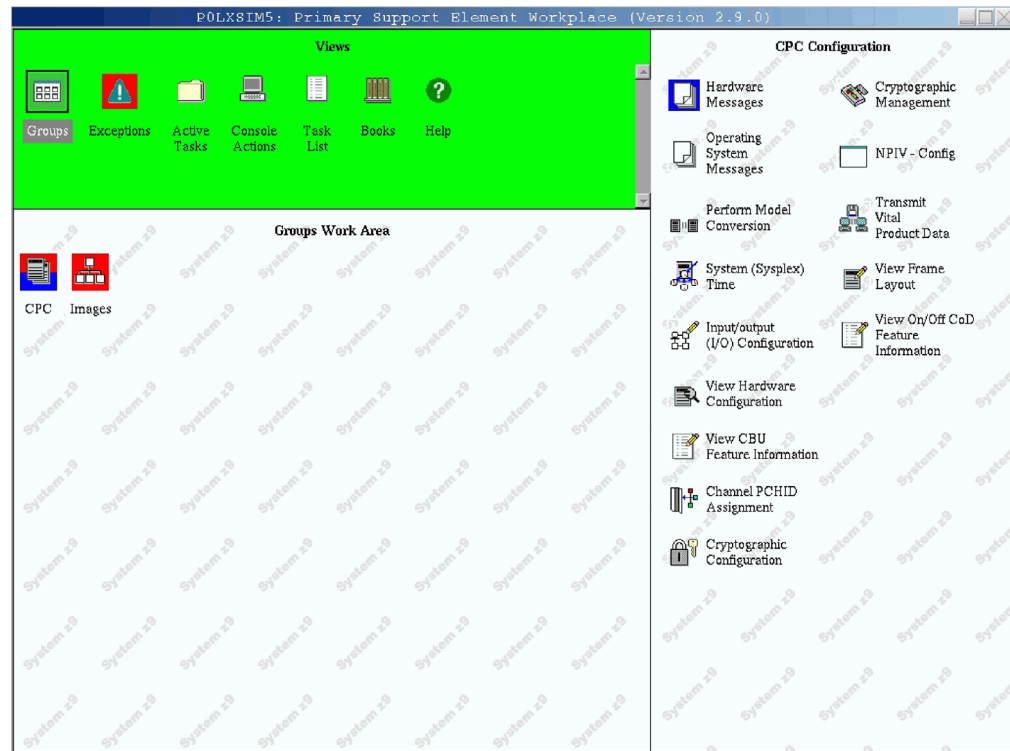


Figure 2-2. Support Element Workplace - Opening Groups

5. Open **Images** from the **Groups Work Area**, and select the logical partition from **Images Work Area**.

**Note:** If you do not plan on performing the **Print Data Set Report**, **Build Data Set**, or **Disassemble Data Set** actions, you can open **CPC** instead of **Images** from the **Groups Work Area** and then select a CPC. See Note 1 on page 2-7 for more detailed information.

6. Open the **Input/Output (I/O) Configuration** task to start it.

**Note:** IOCP uses one CP. If that CP is shared by many logical partitions, then you may notice a reduction in the stand-alone IOCP's performance.

You are now viewing the Input/Output Configuration window. Figure 2-3 shows the window for the system programmer user role.

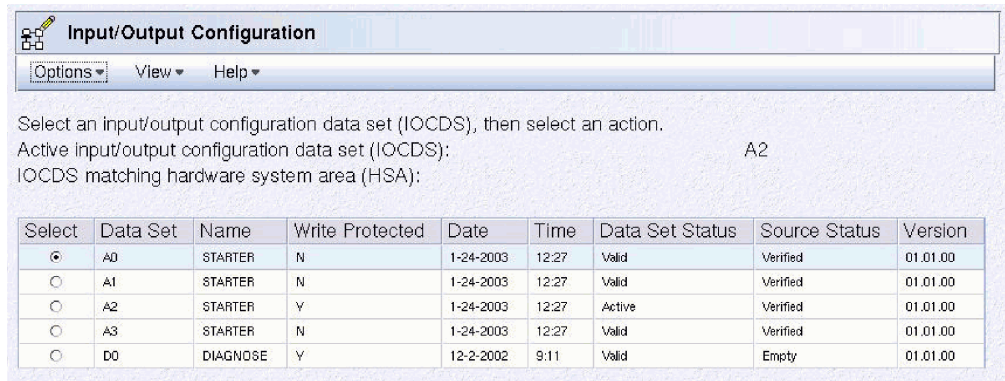


Figure 2-3. Input/Output Configuration Window

## Navigating the I/O Configuration Panels

The Input/Output Configuration window panel, shown in Figure 2-4, is the starting point for all of the stand-alone IOCP functions.

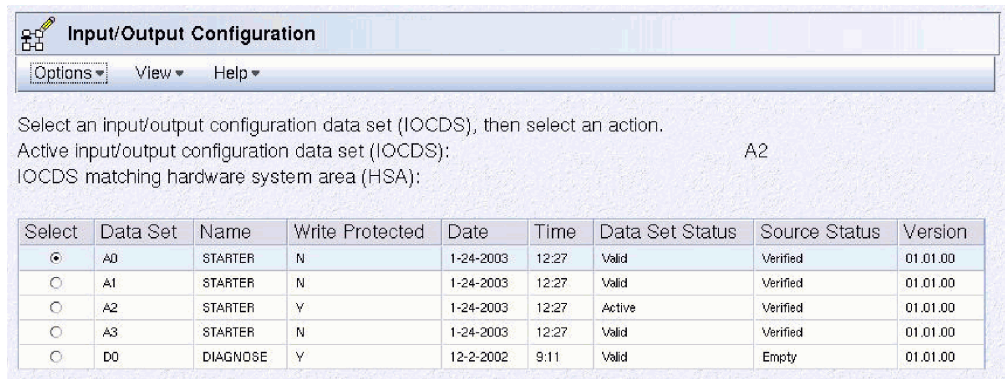


Figure 2-4. Input/Output Configuration Window

There are four user I/O configuration data sets, identified as **A0** through **A3**. These data sets have names that the system owner supplies. The fifth data set, **D0**, is a diagnostic data set. **D0** cannot be altered. It is intended for service personnel to use, with the following possible exception. If the user is on a coupling facility or could not perform a power-on reset using any of the A0 through A3 data sets, **D0** could be used to perform the power-on reset. I/O cannot be accessed after a **D0** power-on reset.

If a data set appears on the **IOCDS matching hardware system area (HSA)** line, that data set is a dynamic-capable IOCDS, which is equivalent to the I/O configuration in the hardware system area (HSA). A dynamic-capable IOCDS is one written using the HCD software tool on OS/390, z/OS, z/OS.e, or VM or specifying IOCP CMS utility option DYN for VM. If a data set appears on the **Active input/output configuration data set (IOCDS)** line, that data set has a Data Set Status of Active.

The Input/Output Configuration window has an **Options** pull-down (see Figure 2-5 on page 2-6). The option actions allow the status or the content of the selected I/O configuration to be changed. The Input/Output Configuration window as well as the **Options** and **View** menus are all explained in greater detail on the following pages. The important point here is that this window provides access to all of the

information about the configuration data sets currently available on the system, and the **Options** pull-down permits the user to make changes to that information.

## Input/Output Configuration Panel

The Input/Output Configuration window (see Figure 2-4 on page 2-4) displays the following information:

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Data Set</b>        | This is a 2-character identifier for the IOCDS. There are four IOCDSs (A0, A1, A2, and A3) that you can alter. "Starter I/O Configuration Data Sets" on page 1-4. describes them.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Name</b>            | The 8-character name is the identification of the IOCDS. The name comes from the first 8 characters that you have entered in the MSG1= keyword value in the ID statement. The displayed name is saved from the IOCDS when it is written to the support element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Write Protected</b> | <p><b>NO</b> indicates that the IOCDS is not write-protected. <b>YES</b> indicates that the IOCDS is write-protected. Write-protection prevents the IOCDS from being overwritten by batch IOCP or stand-alone IOCP and from being overlaid by <b>Copy Configuration</b>. Write-protection also prevents the I/O configuration source (IOCS) file from being:</p> <ul style="list-style-type: none"><li>• Overlaid by <b>Disassemble Data Set</b>, <b>Build Data Set</b>, or <b>Import Source File</b> from the <b>Hardware Management Console Diskette</b> or <b>FTP Location</b></li><li>• Edited by <b>Open Source File</b></li><li>• Deleted by <b>Delete Source File</b>.</li></ul>                                                                                                                                                                                                                                                                                                                          |
| <b>Date</b>            | Month, day, and year when the IOCDS was built.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Time</b>            | Hour and minute when the IOCDS was built. (Displayed in 24-hour format.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Data Set Status</b> | <p>Can be one of the following:</p> <ul style="list-style-type: none"><li>• <i>Valid</i> means the IOCDS is usable for power-on-reset (POR) purposes. Its content matches the source file only if the source status is Verified or Warnings.</li><li>• <i>Invalid</i> means the IOCDS is not usable for power-on reset purposes and some IOCP actions. Either IOCP is currently writing to the IOCDS or the IOCDS was written in preparation for a CPC upgrade and will be unusable until the CPC is upgraded to the type of CPC supported by the IOCDS.</li><li>• <i>Active</i> means this IOCDS was used during the most recent power-on reset or was selected by a dynamic activation from the System Control Program (SCP). Only one IOCDS can be active at a given time. The active IOCDS is made write-protected by the support element during POR with the IOCDS or after a dynamic activation by the SCP. The write protection can be removed with the <b>Disable Write Protection</b> action.</li></ul> |
| <b>Source Status</b>   | <p>Can be one of the following:</p> <ul style="list-style-type: none"><li>• <i>Verified</i> means the stand-alone IOCP Build was processed with this source and was successful with no warnings or errors.</li><li>• <i>Warnings</i> mean the stand-alone IOCP Build was processed with this source and was successful with one or more warnings or caution messages.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

- *Errors* means the stand-alone IOCP Build was processed with this source and was not successful. There was a terminal error.

**Note:** No IOCDS is written and the IOCDS remains as it was before the Build.

- *Modified* means the source file has been changed by editing the file. This also indicates that the source may not match the current IOCDS.
- *Imported* means the source file was overlaid by an import from the **Hardware Management Console Diskette** or **FTP Location**.
- *Empty* means the source file has been deleted or was erased when a batch IOCP program wrote the IOCDS.
- *Unknown* means there is an error with the source file status.

**Version** Identifies the version of IOCP that was used to create the IOCDS.

## Using the I/O Configuration Program Options

The Input/Output Configuration window provides access to all of the information about the configuration data sets currently available on the system. Selecting **Options** (see Figure 2-5) permits you to change that information. The following sections explain the **Options** menu and several other menus in greater detail.

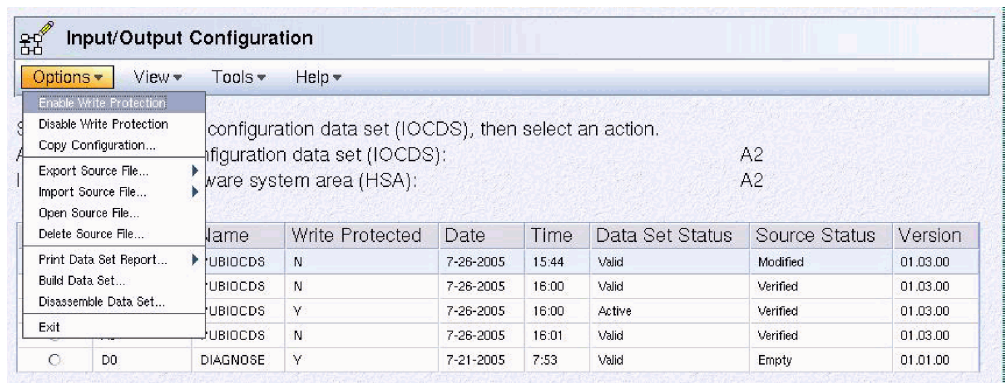


Figure 2-5. Input Output Configuration - Options

Selecting **Options** displays a list of actions, shown in Figure 2-5. The actions under **Options** permit changing the status or the content of the selected I/O configuration. Select the action to perform by clicking it or by moving the cursor and pressing **Enter**.

The actions under **Options** include:

- **Enable Write Protection**
- **Disable Write Protection**
- **Copy Configuration**
- **Export Source File**
- **Import Source File**
- **Open Source File**
- **Delete Source File**
- **Print Data Set Report**

- **Build Data Set**
- **Disassemble Data Set**
- **Cancel.**

**Notes:**

1. The **Print Data Set Report**, **Build Data Set**, and **Disassemble Data Set** actions require activating the targeted logical partition with I/O Configuration Control Authority enabled through its activation profile. All other actions are performed on the support element and do not require the stand-alone IOCP code to be loaded and run in a logical partition, and they do not require an activated partition and power-on reset of the CPC.
2. **Print Data Set Report**, **Build Data Set**, and **Disassemble Data Set** load the stand-alone IOCP code into a logical partition and run the code on the system processor. A request to **Confirm the Action** is presented when you select one of these functions.
3. The Confirm the Action window (see Figure 2-6) warns you that any processor program or operating system in the targeted logical partition will be overlaid with the stand-alone code to perform these functions.

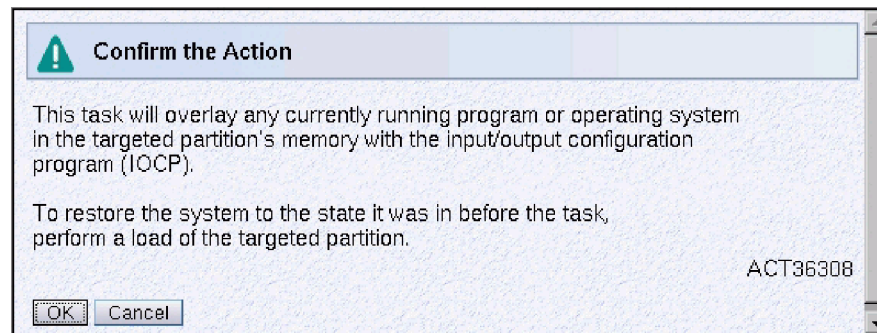


Figure 2-6. Confirm the Action Window

This window is presented only the first time the IOCP stand-alone code is loaded into a logical partition. The Confirm the Action window also provides you an escape by providing the **Cancel** action.

The sections that follow provide a brief overview of each **Options** action. A reference at the end of each overview indicate where to find detailed descriptions.

## Enable Write Protection

This action protects the I/O configuration data set (IOCDS) and I/O configuration source (IOCS) files on the hard disk from being overwritten. If a file is protected, a “Y” is displayed on the Input/Output Configuration window under the Write Protected heading for the selected configuration. If you want to replace an IOCDS or IOCS that is write-protected, you must first remove the write protection using the **Disable Write Protection** action.

## Disable Write Protection

This action resets the protected status of the I/O configuration data set (IOCDS) and the I/O configuration source (IOCS) files on the hard disk. Files without write protection can be overwritten. Unprotected files are displayed on the Input/Output Configuration window with an “N” under the Write Protected heading for the selected configuration.

## Copy Configuration

This action copies the I/O configuration data from one IOCDS to another. You might do this to duplicate an existing I/O configuration so you can test some changes on the copy. Both the source and IOCDS are copied.

When you select the **Copy Configuration** action on the Input/Output Configuration window (see Figure 2-5 on page 2-6), the window shown in Figure 2-7 is displayed:

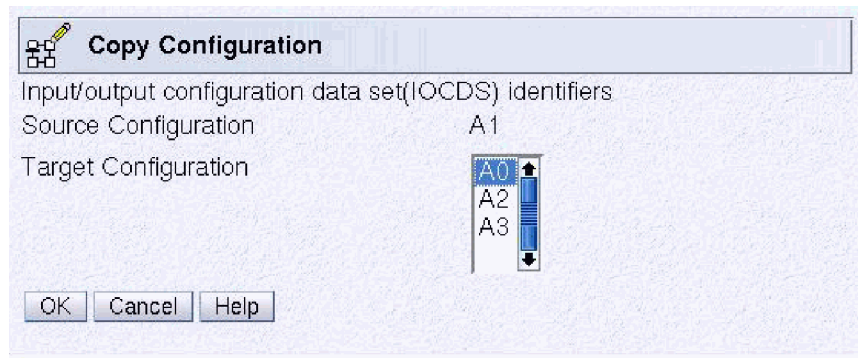


Figure 2-7. Copy Configuration Window

Use this window to duplicate I/O configurations (IOCDS file and source IOCP card-image file if it exists).

The source configuration is displayed (for example, **A1**) as well as the target configurations to be overlaid (for example, **A0**, **A2**, **A3**). If you have designated certain configurations as write-protected, they will not display as copy targets. Also, the active configuration displays only if write protection has been removed.

## Export Source File

**Export Source File** is used to transfer the card-image source file from the support element hard disk to the Hardware Management Console or an FTP location.

When you select **Export Source File** on the Input/Output Configuration window (see Figure 2-5 on page 2-6), the window shown in Figure 2-8 on page 2-9 is displayed. You are prompted to select the target device to which to export the I/O configuration source (IOCS) file. The active selections for exporting depend on if you are operating from the support element or Hardware Management Console.

**Note:** If the diskette has insufficient space to contain the IOCS file, the IOCS file is compressed using a zip compatible program. If there is insufficient space for the compressed file, the export fails.

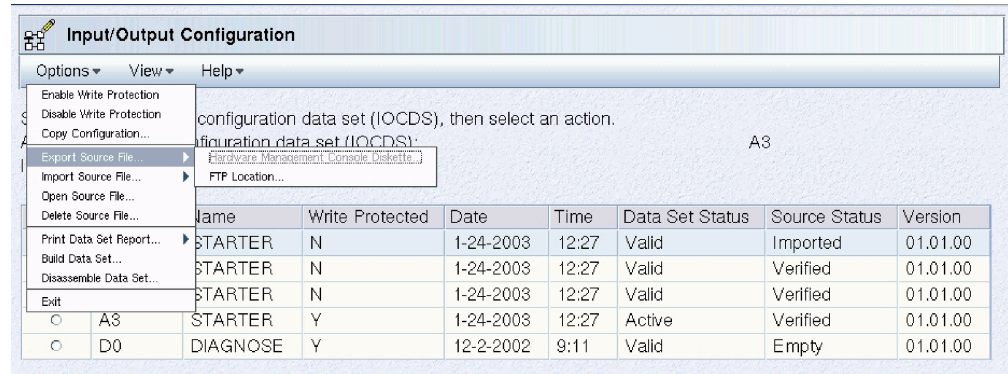


Figure 2-8. Export Source File Options

If you select **Hardware Management Console Diskette**, the Export to HMC Diskette window is displayed (Figure 2-9).

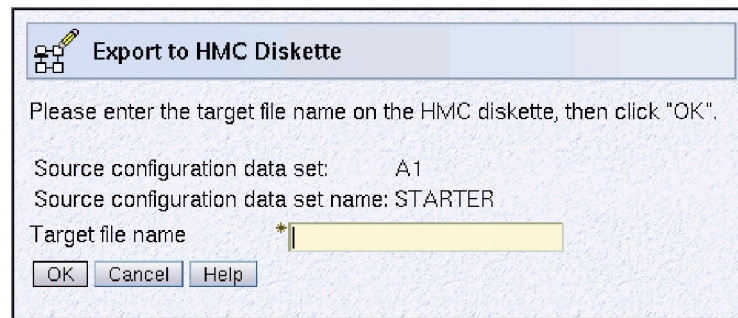


Figure 2-9. Export to HMC Diskette

From this window:

1. Type the target file name.
2. Select **OK**.

If you select **FTP location**, the File Transfer Information window is displayed (Figure 2-10).

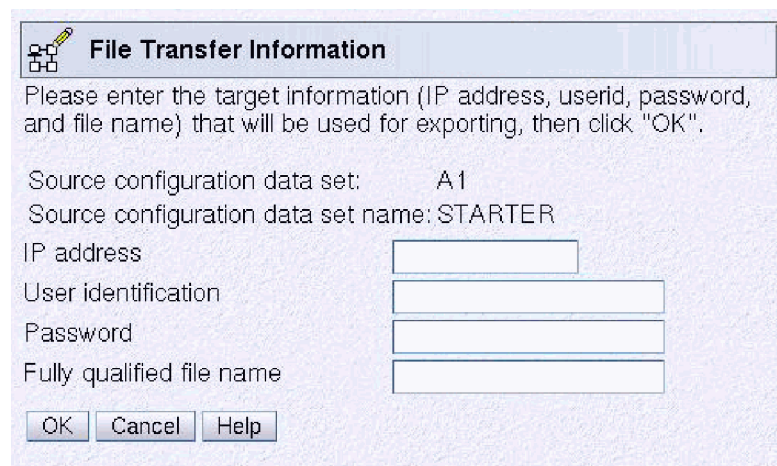


Figure 2-10. File Transfer Information Window

From this window:

1. Enter the IP address of the target FTP destination receiving the source file to export.
2. Enter the user name for the target FTP destination.
3. Enter the password, if any, associated with the user name for the target FTP destination.
4. Enter the fully qualified file name for the destination file, for example:  
Drive:\Directory\filename.ext.
5. Select **OK**.

## Import Source File

**Import Source File** is used to transfer the card-image input to the support element hard disk from a diskette in the 3.5-inch A-drive in the Hardware Management Console or from an FTP location. The source can then be edited and used to build an IOCDS.

The source file must contain text characters. If importing from diskette, it must either be in DOS file format or have been compressed (for example, using a zip compatible program). If the file is compressed, it must contain a single source file.

Figure 2-11 shows the choices that are displayed when you select **Import Source File** under **Options** on the Input/Output Configuration window:

- **Hardware Management Console Diskette**
- **FTP Location.**

Select the source device from which to import the card-image statements (source) file. The active selections for importing depend on if you are operating from the support element or Hardware Management Console.

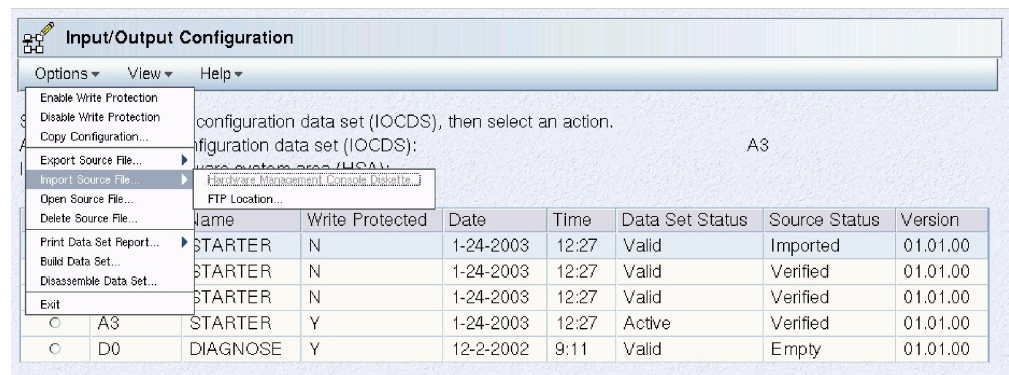


Figure 2-11. Import Source File Options

If you select **Hardware Management Console Diskette**, the Import from HMC Diskette window is displayed (see Figure 2-12 on page 2-11).

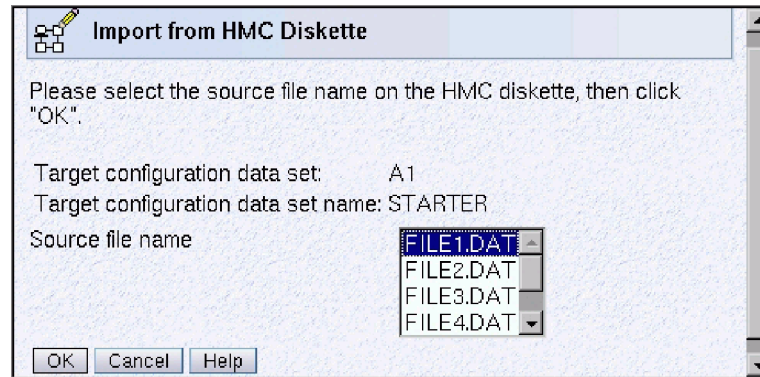


Figure 2-12. Import from HMC Diskette Window

From this window:

1. Select the source file name.
2. Select **OK**.

If you select **FTP Location**, the File Transfer Information window is displayed (see Figure 2-13).

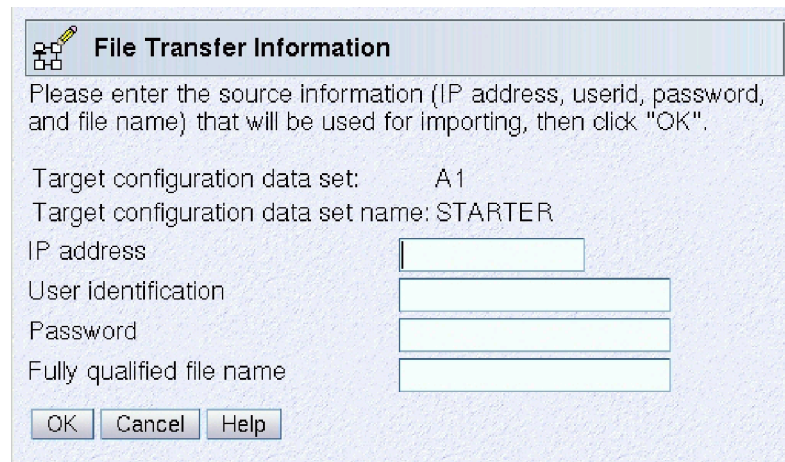


Figure 2-13. File Transfer Information Window

From this window:

1. Enter the IP address of the target FTP destination containing the source file to import.
2. Enter the user name for the target FTP destination.
3. Enter the password, if any, associated with the user name for the target FTP destination.
4. Enter the fully qualified file name for the source file to be imported, for example: Drive:\Directory\filename.ext.
5. Select **OK**.

## Open Source File

The **Open Source File** action opens an editor to allow you to:

- Change an existing I/O configuration source
- Create new card-image statements.

**Note:** If you edit a dynamic I/O configuration source (IOCS) file, stand-alone IOCP disables the dynamic capability of the IOCS file. (A dynamic IOCS file is one that has been built using the Hardware Configuration Definition (HCD) or the VM IOCP CMS utility with the DYN option and imported to the support element hard disk.) If a dynamic IOCS file is imported by diskette or from an FTP location and **not** changed, then the stand-alone IOCP Build program will create an IOCDS that is dynamic capable.

This editor, by itself, does not run any of the steps necessary to generate an IOCDS. Before using the editor, you can create a new source file from one of the following if no card-image exists:

- Card-image data imported from the Hardware Management Console diskette or from an FTP location
- Card-image data recreated by disassembling an IOCDS
- Card-image data copied from another source file.

A source file is associated with each IOCDS. If the IOCDS was generated using the Batch IOCP program, then a **Disassemble** action must be performed to get the equivalent source file for that I/O configuration.

## Using the Editor

When you select the **Open Source File** action under **Options**, a window such as that shown in Figure 2-14 is displayed. This shows a sample **A3** configuration.

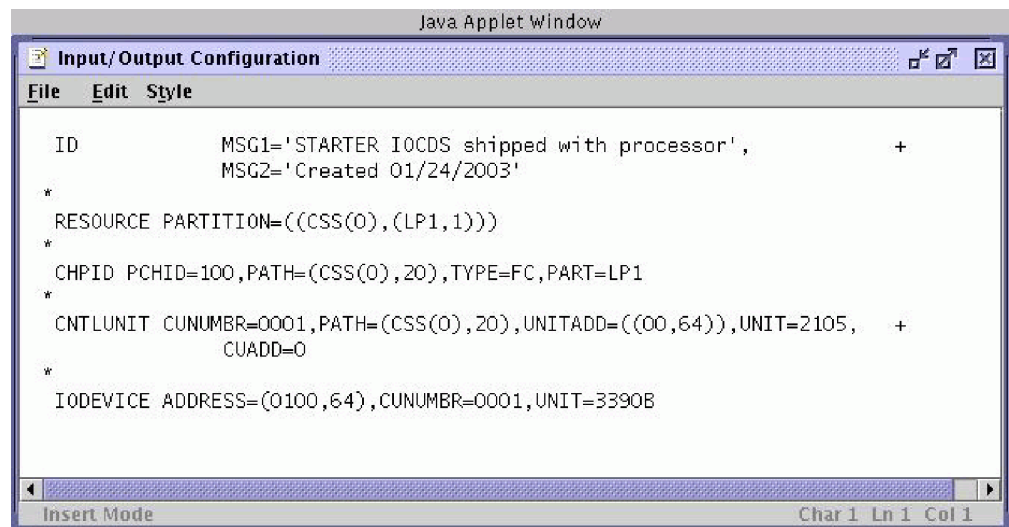


Figure 2-14. Editing IOCDS Card-Image Data

The bottom right of the edit screen displays the current character number (Char), line number (Ln) and column number (Col).

You cannot save an IOCS that has more records than the maximum allowed. For more information on the maximum size of an IOCS and how to reduce the size of an IOCS, see "I/O Configuration Source Files" on page 1-4.

Menu items on the menu bar at the top of the editor window include the following types of actions:

- **File**
- **Edit**
- **Style**.

The next section discusses the actions under each menu item. When you select a menu item, this displays a pull-down listing the actions under it (as shown in Figure 2-15). There are several ways to perform an action:

- Click the action
- Use abbreviated keyboard entry by placing the cursor on the underlined character in the name of the action and pressing Enter. (For example, under the **File** menu item, you could put your cursor on the “S” in **Save** to save the file.)
- Use a keyboard function key shortcut by entering the key combination listed on the right side of the action list.

**File:** Figure 2-15 shows the **File** actions.

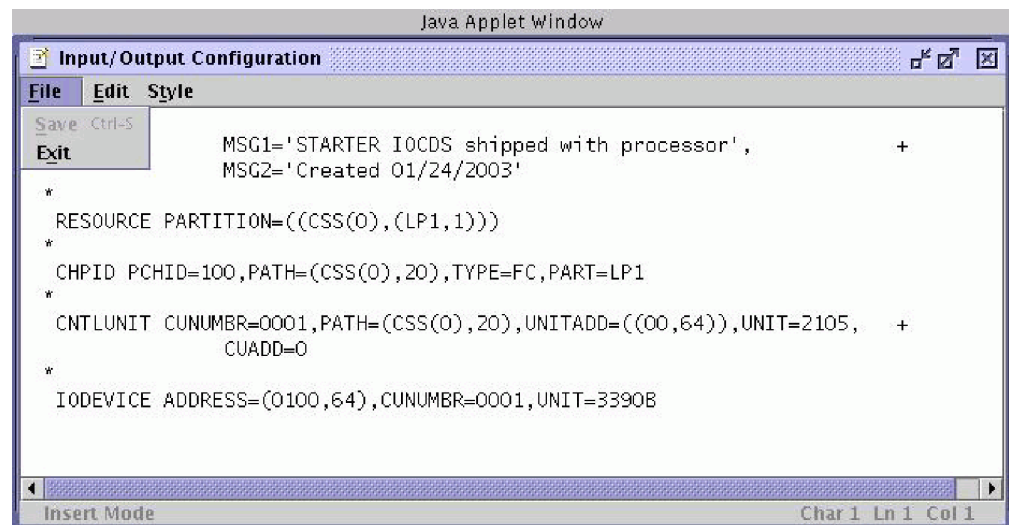


Figure 2-15. File Actions

The **File** actions are:

**Save (Ctrl+S)** Saves the current data without exiting the edit session.

**Exit** Ends the editor. If the data in the file has changed since your last save, you are prompted to save the data or discard the changes.

**Edit:** Figure 2-16 shows the **Edit** actions under **Open Source File**.

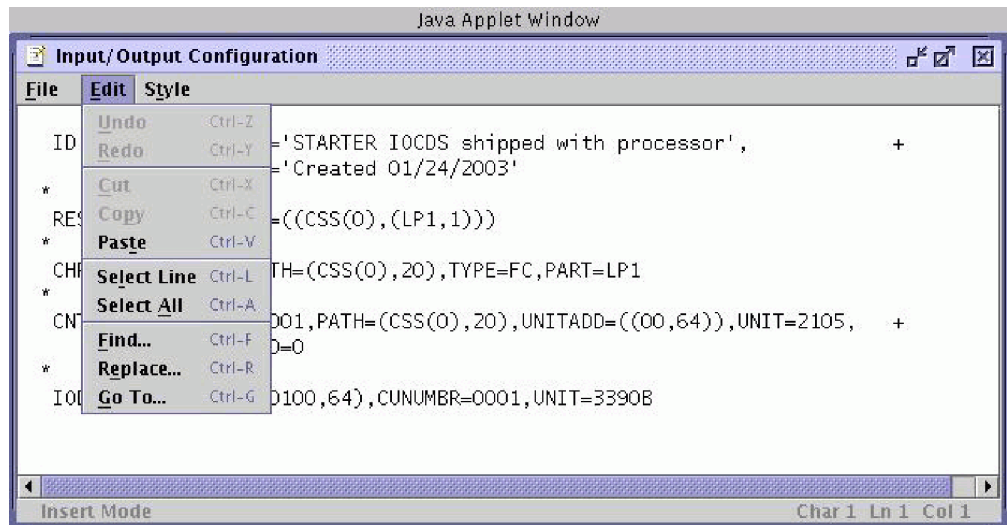


Figure 2-16. Edit Actions

The **Edit** actions are:

- Undo (Ctrl+Z)** Undoes the last addition or deletion. **Undo** is not available before you make a change.  
If you paste in text, clicking **Undo** one time removes the added text.  
If you type in text, clicking **Undo** one time removes one character.
- Redo (Ctrl+Y)** Redoes a change on which you have used **Undo**. **Redo** is not available before you have used **Undo**.
- Cut (Ctrl+X)** Removes marked (selected) text.
- Copy (Ctrl+C)** Copies marked text.
- Paste (Ctrl+V)**  
Inserts copied text at the cursor position.
- Select Line (Ctrl+L)**  
Marks (selects) the entire line where the cursor is placed.
- Select All (Ctrl+A)**  
Marks all the text in the file.
- Find (Ctrl+F)** Locates a specified search argument. Clicking **Find** displays the **Search** field under the menu items, as Figure 2-17 on page 2-15 shows:

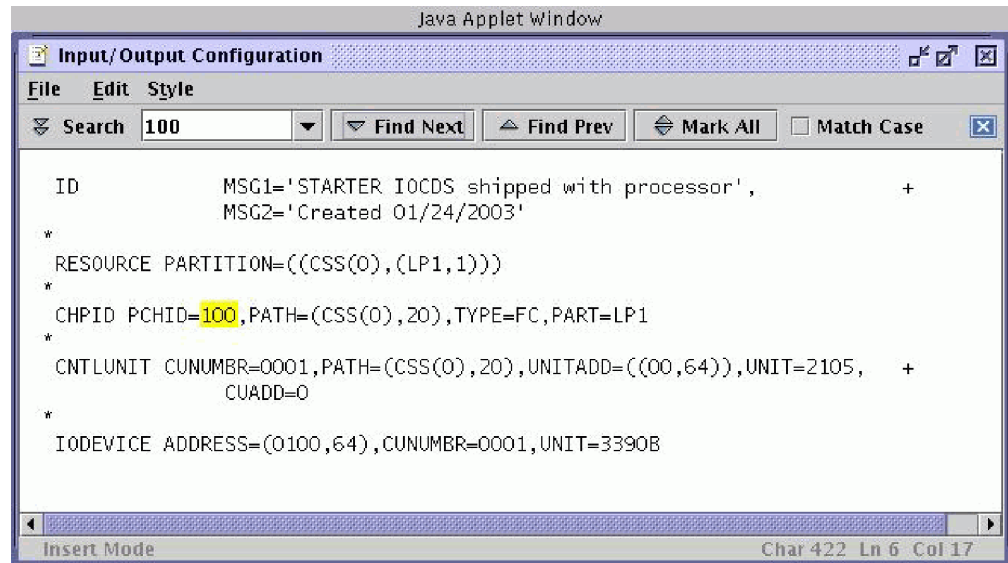


Figure 2-17. Searching for Text

Type the search argument in the Search field and click **Find Next**, **Find Prev**, or **Mark All**. (You can optionally perform a case-sensitive search by selecting **Match Case**.) The search argument is highlighted in yellow in the file.

#### Replace (Ctrl+R)

Replaces a search argument with a specified string. Clicking **Replace** displays the **Replace** field under the **Search** field, as Figure 2-18 shows.

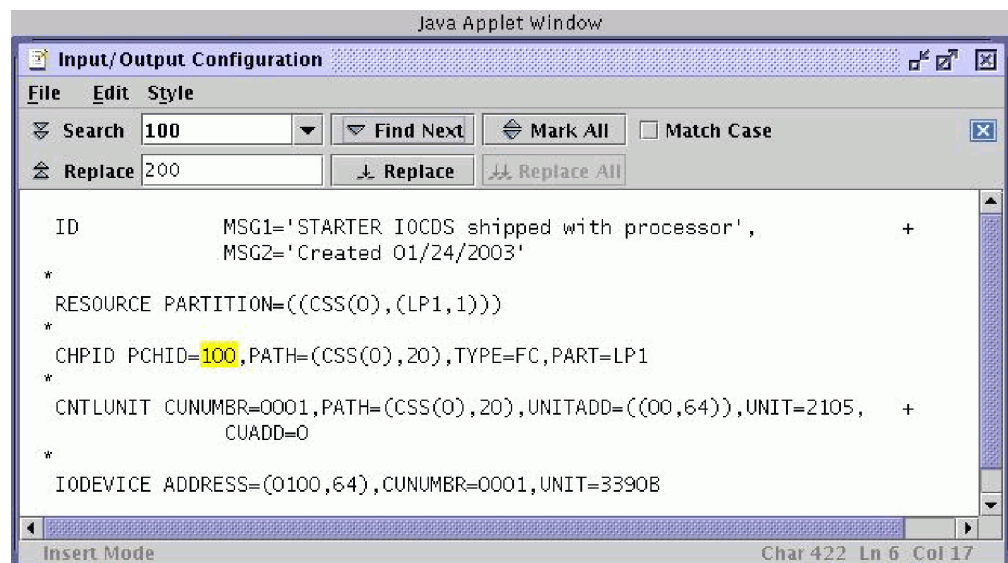


Figure 2-18. Replacing Text

Enter the search argument in the **Search** field and the replacement string in the **Replace** field. Click **Find Next** or **Find All** to find the target (which is highlighted in yellow), and then click **Replace** or **Replace All**, respectively, to change it.

### Go To (Ctrl+G)

Goes to the specified line number. Clicking **Go To** displays the Go To Line window, as Figure 2-19 shows. Specify the target line number and click **OK**.



Figure 2-19. Go To Line Window

## Delete Source File

This action erases the I/O configuration source (IOCS) file and replaces it with a minimum default template IOCS file. Only the IOCS file is deleted. The IOCDS file is not deleted.

**Note:** Use this action with extreme care, since the IOCS file for the selected IOCDS will be erased. You are recommended to back up the IOCS (using the **Export** action) before performing a delete.

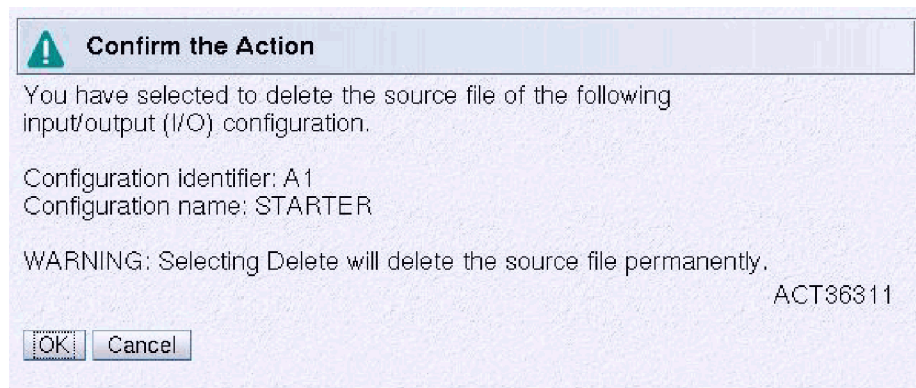


Figure 2-20. Confirm the Action Window (for Deleting Source File)

A configuration is made up of the IOCDS file and an IOCS file. The IOCS is not required for operation, only the IOCDS. The IOCS may not always be there, as in the case of a delete, or the case of a batch IOCP program writing the IOCDS file to the support element hard disk, which performs the IOCS delete function automatically.

## Print Data Set Report

This action allows a formatted report of the IOCDS to be printed or written to a channel-attached tape drive.

This action reads the selected IOCDS file and prints the I/O configuration reports on the system printer or writes the formatted reports to a channel-attached tape. The window shown in Figure 2-21 on page 2-17 displays when the **Print Data Set Report** option is selected from the Input/Output Configuration window. If the Data Set Status is invalid, the **Print Data Set Report** option is not available.

**Note:** A coupling facility cannot perform the **Print Data Set Report** action.

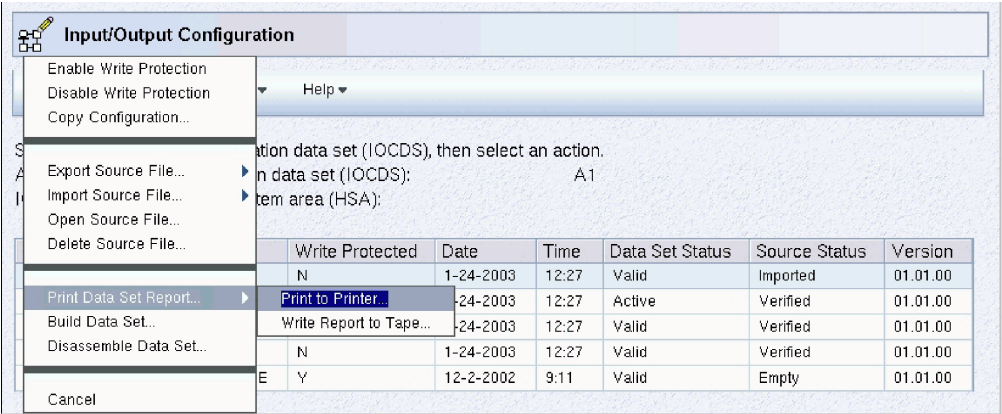


Figure 2-21. Print Data Set Report Options

If you select **Print to Printer**, the Printer Information window is displayed (Figure 2-22). If this is the first time an attempt has been made to load IOCP code into the targeted logical partition, the Confirm the Action window shown in Figure 2-6 on page 2-7 is presented to warn that processor program storage in the logical partition will be overlaid and to provide an escape. The targeted logical partition must be activated and have I/O Configuration Control Authority enabled via its activation profile.

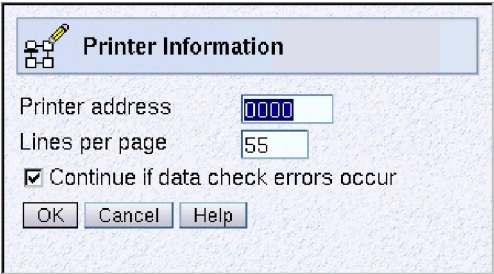


Figure 2-22. Printer Information Window

1. In the **Printer address** field, enter the device number of the printer that is to print IOCP messages and reports.  
  
**Note:** The output printer that you specify in this display window **must be a channel-attached device** and must be in the current IOCDS that you selected at power-on reset and must be available to the logical partition you are using to run IOCP. The output printer must be initialized (print/forms buffer must be loaded) before you run IOCP. While running the configuration program, you should assign exclusively to the program any devices and control units that IOCP uses. (Other systems should not share the devices and control units).
2. In the **Lines per page** field, enter the maximum number of lines that you want on an output page (you can specify a maximum of 99). The default is 55. (IOCP uses a value of 20 if you specify a value less than 20.)

If you select **Write Report to Tape**, the Write report to Tape window is displayed (Figure 2-23 on page 2-18). If this is the first time an attempt to load IOCP code into processor storage has been made, the Confirm the Action window shown in

Figure 2-6 on page 2-7 is presented to warn that processor program storage will be overlaid and to provide an escape.

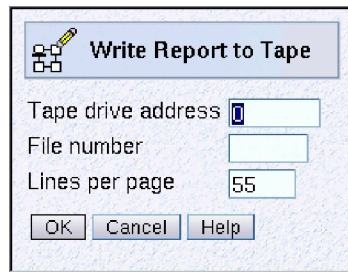


Figure 2-23. Write Report to Tape

1. In the **Tape drive address** field, enter the device number of the tape device that is to receive the formatted I/O configuration reports.

**Note:** The tape drive that you specify in this display window **must be a channel-attached device** and must be defined in the current IOCDS that you selected at power-on reset and must be available to the logical partition you are using to run IOCP. The tape must be able to be manually mounted on the drive (for example, IOCP does not support tape library systems). IOCP writes the report with records that have a length of 133 bytes (where the first character is an ANSI carriage control character) and blocks that are 1330 bytes long.

2. In the **File number** field, enter the number of the physical file on the tape (such as 1, 2, or 3) where you want to store the file. IOCP issues a Rewind command followed by forward space file commands to position the tape to the requested file.
3. In the **Lines per page** field, enter the maximum number of lines to include per page of the I/O configuration report (you can specify a maximum of 99). The default is 55. (IOCP uses a value of 20 if you specify a value less than 20.)
4. Select **OK**.

## Build Data Set

The **Build Data Set** action:

- Processes the source file data for the selected I/O configuration.
- Checks the syntax and validates the configuration.
- Generates an IOCDS and, if there are no errors, writes the IOCDS to the support element hard disk.
- Writes the I/O configuration source (IOCS) file to the support element hard disk with any IOCP messages embedded in the file.

To create an IOCDS file, select the **Build Data Set** action on the Input/Output Configuration window (Figure 2-5 on page 2-6). Doing so displays the Build Configuration window:

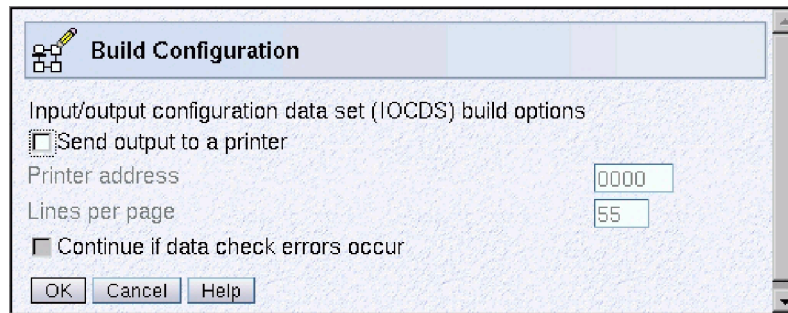


Figure 2-24. Build Configuration Window

From this window:

1. To print the output, select **Send output to a printer**.
2. In the **Printer address** field, enter the device number of the printer that is to print IOCP messages and reports.

**Note:** The output printer that you specify in this display window **must be a channel-attached device** and must be in the current IOCDs that you selected at power-on reset and must be available to the logical partition you are using to run IOCP. The output printer must be initialized (print/forms buffer must be loaded) before you run IOCP. While running the configuration program, you should assign exclusively to the program any devices and control units that IOCP uses. (Other systems should not share the devices and control units).

3. In the **Lines per page** field, enter the maximum number of lines that you want on an output page (you can specify a maximum of 99). The default is 55. (IOCP uses a value of 20 if you specify a value less than 20.).
4. De-select the **Continue printing if data errors occur** option to cause the printer to stop if a data check occurs during printing.

The first time an attempt to load IOCP code into the targeted logical partition is made (for example, for the **Build Data Set** action), the Confirm the Action window shown in Figure 2-6 on page 2-7 is presented to warn that processor program storage in the logical partition will be overlaid and to provide an escape. The targeted logical partition must be activated and have I/O Configuration Control Authority enabled via its activation profile.

The completion of the build will be reported in one of three ways:

- Successful
- Warnings (see Figure 2-26 on page 2-20)
- Errors (see Figure 2-27 on page 2-20).

At this point the Input/output (I/O) Configuration Progress window displays (Figure 2-25 on page 2-20), indicating the steps being processed. The system is then reset, the stand-alone IOCP is loaded into storage, and IOCP is started using a program status word (PSW) restart. Certain error, warning or informational messages may also display to assist you with the build.

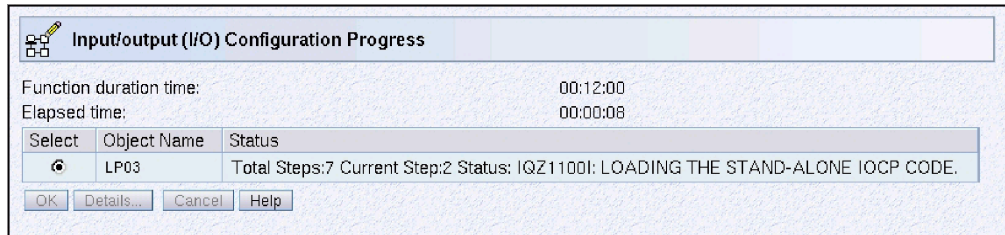


Figure 2-25. Input/output (I/O) Configuration Progress Window

If the build was successful and there are no caution or warning messages, the resultant IOCDS has been written to the support element hard disk.

If the build was successful but had caution or warning messages, the window shown in Figure 2-26 is displayed. The resultant IOCDS has been written to the support element hard disk. Use the **Open Source File** action, described in “Open Source File” on page 2-11 to correct the caution and warning conditions, if necessary.

**Note:** If you edit a dynamic I/O configuration source (IOCS) file (an IOCS file that has been built using the Hardware Configuration Definition (HCD) or the VM IOCP CMS utility with the DYN option and imported to the support element hard disk), stand-alone IOCP disables the dynamic capability of the IOCS file.

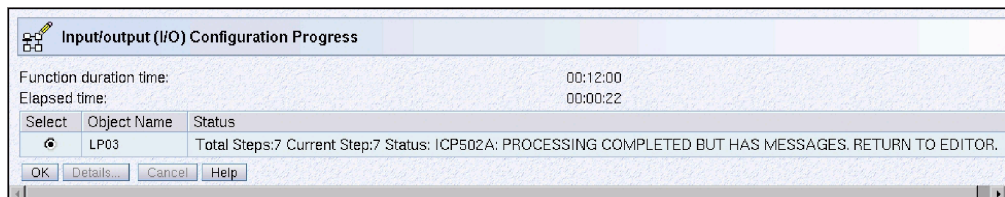


Figure 2-26. Input/output Configuration Progress - Build with Cautions or Warnings

If the build was not successful, an error message will appear, as in Figure 2-27, and the resultant IOCDS will **NOT** be written to the support element hard disk.

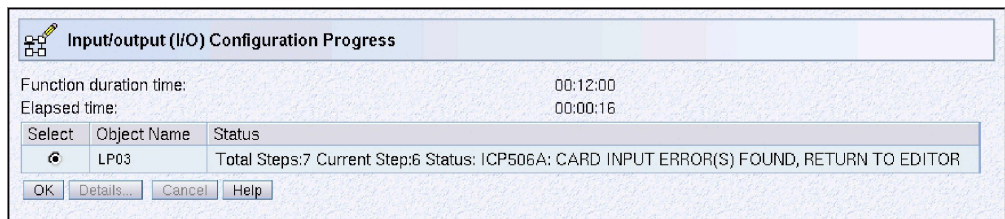


Figure 2-27. Input/output (I/O) Configuration Progress - Build with Errors

The caution, warning, and error messages are embedded in the I/O configuration source (IOCS) file at the line where the condition was detected. To correct the condition, go to the editor by selecting the **Open Source File** action on the Input/Output Configuration window. IOCP messages are displayed in the editor as comments. The messages begin with **\*ICP** in column 1, followed by the IOCP message. “IOCP Messages” are explained in the *Input/Output Configuration Program User’s Guide*, SB10-7037. It is not necessary to remove the messages from the file. IOCP will remove the messages when the conditions are no longer

detected. If you have changed the IOCS file on the support element and have built a new IOCDS on the support element hard disk, an inconsistency may occur between the operating system configuration and the I/O configuration in the newly built IOCDS.

- If you change the hardware configuration with the stand-alone version of IOCP and you use an OS/390, z/OS, or z/OS.e system, or if you use a VM system with which you've chosen to use HCM and HCD, you should make the same changes using HCM or HCD and rewrite the IOCDS before performing the power-on reset. This action ensures consistency between the software and hardware configurations and allows the CPC to be capable of dynamic I/O configuration.
- If you change the hardware configuration with the stand-alone version of IOCP and you use a VM system but do not use HCM and HCD, make the appropriate changes, if any, to the VM system before performing the power-on-reset. If VM cannot sense all the device changes in the hardware configuration during initial program load (IPL), modify the real I/O configuration file and regenerate your operating system; or modify the system configuration file and re-IPL your operating system. This action ensures consistency between the software and hardware configurations. (The real I/O configuration file is HCPRIO. The system configuration file is SYSTEM CONFIG.)

**Note:** For a dynamic-capable system, you must rewrite the IOCDS from VM using the DYN option and perform a power-on reset.

- For a VSE system, if you change the hardware configuration with stand-alone IOCP, you should update the software configuration to reflect the changes (modify the ASI Procedure file). This action ensures consistency between the software and hardware configurations.

IOCP will remove some messages, if necessary, to prevent the I/O configuration source (IOCS) from exceeding the maximum supported IOCS file size for IOCS files on the support element hard disk. For more information on the maximum size of an IOCS and how to reduce the size of an IOCS, see "I/O Configuration Source Files" on page 1-4.

## Disassemble Data Set

This action generates the card-image statements (source file) from an IOCDS file on the support element hard disk and writes a new source file.

Use this action to read an IOCDS from the hard disk on the support element and create an I/O configuration source file (IOCS). IOCP reads the IOCDS, converts it into an IOCS file then writes the file to the support element hard disk. The IOCS contains the full configuration described in the original customer input file, and is the logical equivalent of the card input deck. The IOCS may not appear as it did in the original. Since IOCP does not save comments, comments do not appear in the source file. If the Data Set Status is invalid, the **Disassemble Data set** option is not available.

If this is the first time an attempt has been made to load IOCP code into the targeted logical partition, the Confirm the Action window shown in Figure 2-6 on page 2-7 is presented to warn that processor program storage in the logical partition will be overlaid and to provide an escape. The targeted logical partition must be activated and have I/O Configuration Control Authority enabled via its activation profile.

# Exit

Use Exit to leave the I/O configuration program.

## Using the I/O Configuration Program View Actions

Selecting **View** on the Input/Output Configuration window displays the list of actions shown in Figure 2-28. The actions under **View** let you see what is actually written in the selected IOCDS file. Select the action to perform by clicking it or by moving the cursor and pressing Enter.

**Note:** The information displayed using **View** is read directly from the IOCDS file, not the source.

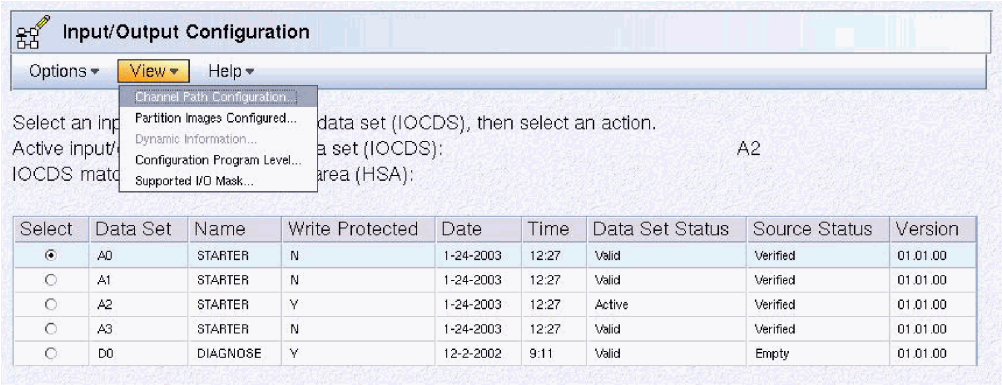


Figure 2-28. Input/Output Configuration View Actions

The actions under **View** include:

- **Channel Path Configuration**
- **Partition Images Configured**
- **Dynamic Information**
- **Configuration Program Level**
- **Supported I/O Mask.**

**Note:** All **View** actions are performed on the support element and do not require the stand-alone IOCP code to be loaded and run in a logical partition, and they do not require an activated partition and power-on reset of the CPC.

## Channel Path Configuration

**Channel Path Configuration** displays information that defines channel paths in the selected input/output (I/O) configuration. If the data set status is invalid, the Channel Path Configuration option is not available.

Selecting **Channel Path Configuration** displays the Channel Path Configuration window (Figure 2-29 on page 2-23).

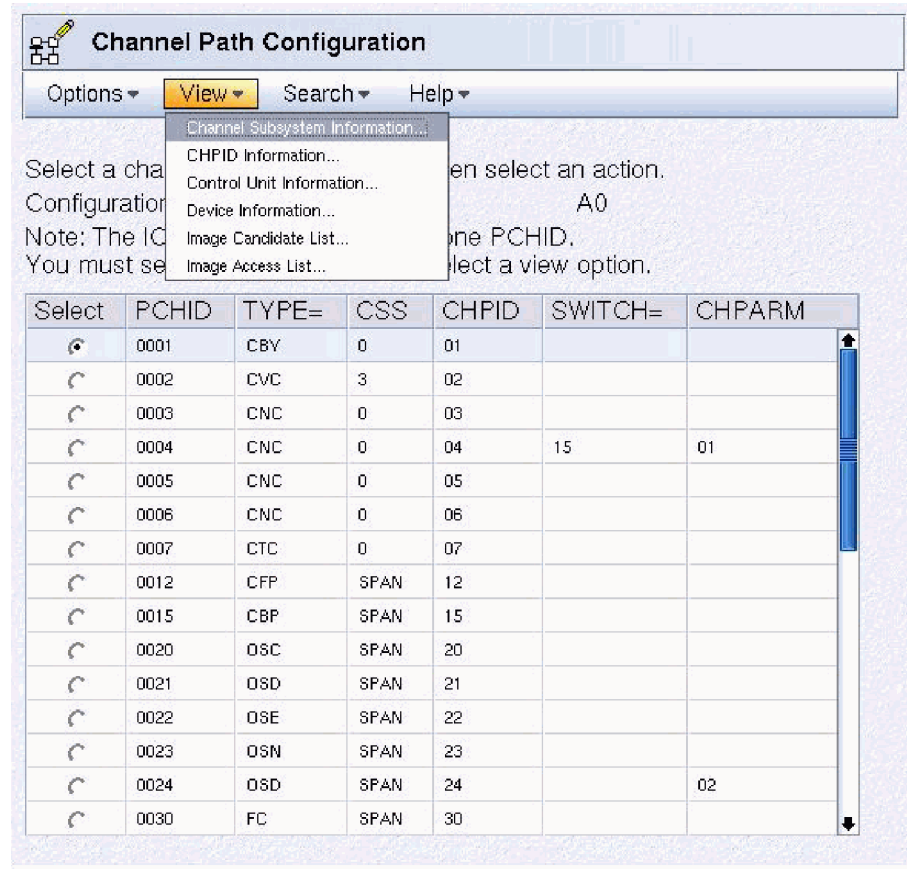


Figure 2-29. Channel Path Configuration

Available choices include:

- **Channel Subsystem Information**
- **CHPID Information**
- **Device Information**
- **Image Candidate List**
- **Image Access List.**

### Channel Subsystem information

Select **Channel Subsystem information** to display the logical channel subsystem information for the selected channel in the Channel Subsystem Information window.

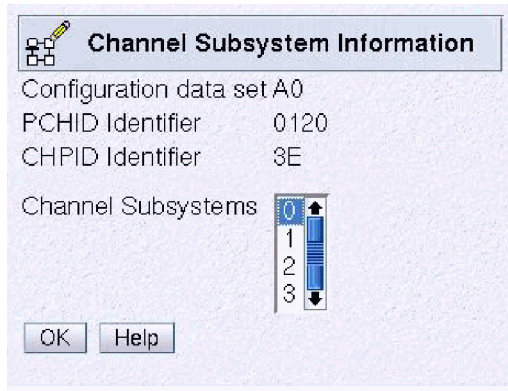


Figure 2-30. Channel Subsystem Information Window

## CHPID information

Select **CHPID Information** to display the channel path identifier information for the selected channel in the CHPID Information window. If the channel path is shared, select Image Access List on the **Channel Path Configuration's View** menu (see Figure 2-29 on page 2-23) to display the logical partitions (LPs) that will have access to the channel path following the initial power-on reset of the IOCDS. If the channel path is shared or reconfigurable (REC), select **Image candidate list** on the **Channel Path Configuration's View** menu to display the LPs that can access the channel path.

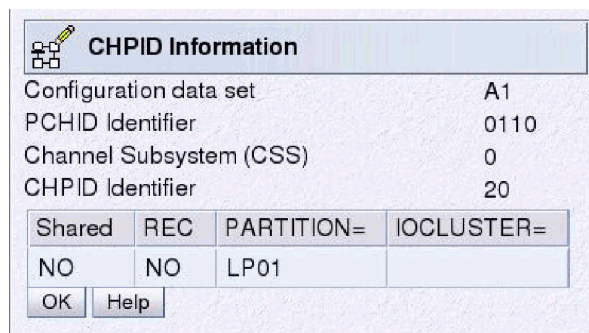


Figure 2-31. CHPID Information

## Control Unit and Device Information

Select "Control unit information" or "Device information" on the **Channel Path Configuration's View** menu to display the control units and devices for a channel path. Control unit and device information is displayed on a *per path basis*. A path is the combination of logical channel subsystem (CSS), CHPID, link address, and control unit logical address (CUADD). Therefore, if the channel path you have selected has configured to it more than one CSS, link address, or control unit logical address on a link address, windows are displayed where you must select a single one of each of these path components until you have selected a unique path.

When a channel path is spanned to multiple CSSs, the Channel Subsystem Selection window is displayed, as shown in Figure 2-32. Select a CSS for the channel path.

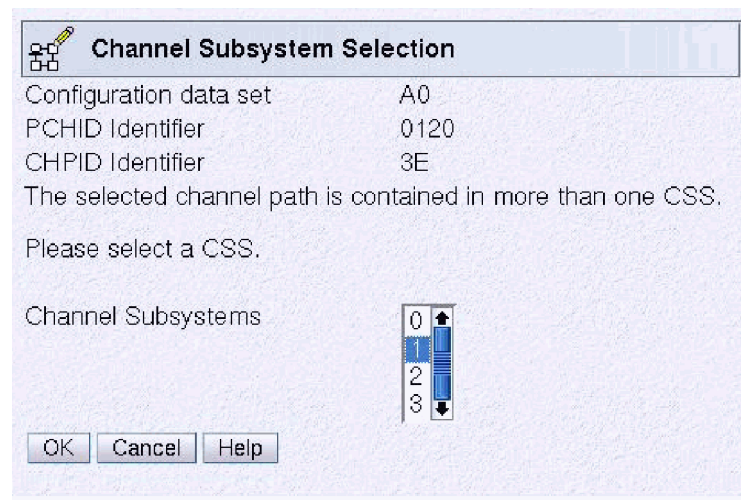


Figure 2-32. Channel Subsystem Selection Window

When a channel path has multiple control units with different link addresses, the Select a Link Address window is displayed, as shown in Figure 2-33. This window displays all the link addresses defined in the selected IOCDS for the selected channel path. Select the specific link address for which you want control unit or device information to be displayed.

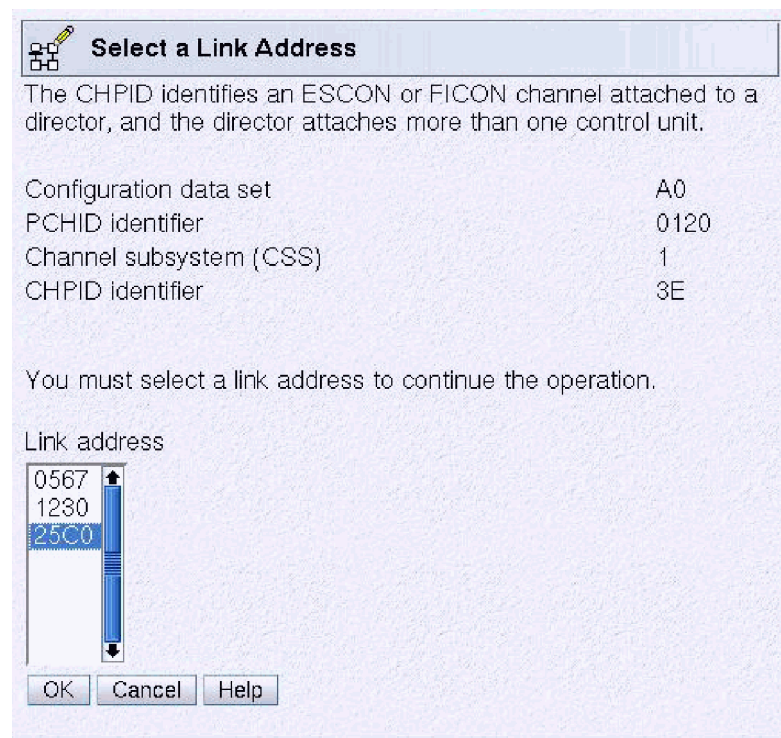
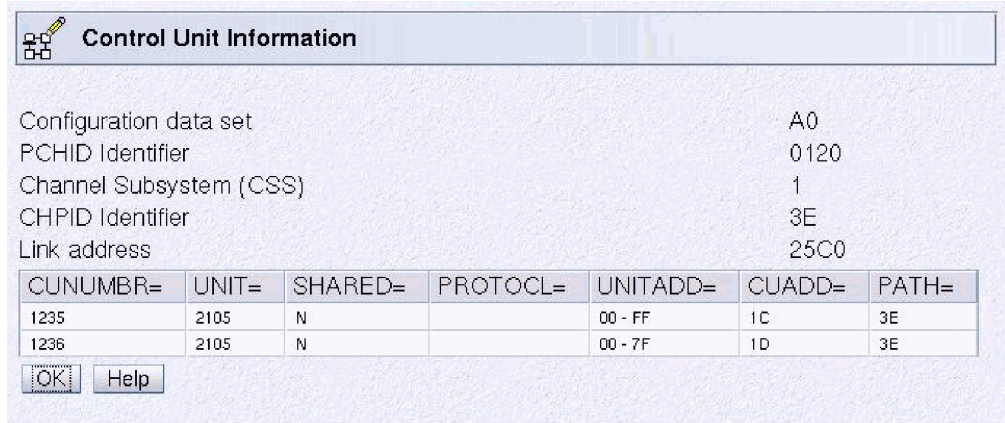


Figure 2-33. Select a Link Address Window

The **Control Unit Information** window is displayed, as shown in Figure 2-34, when you select **Control Unit Information** on the **Channel Path Configuration's View** menu (see Figure 2-29 on page 2-23) and a unique CSS and link address have been selected, if necessary, for the selected channel path. This window displays all the control units associated with the selected path (CSS.CHPID.LINK).



**Control Unit Information**

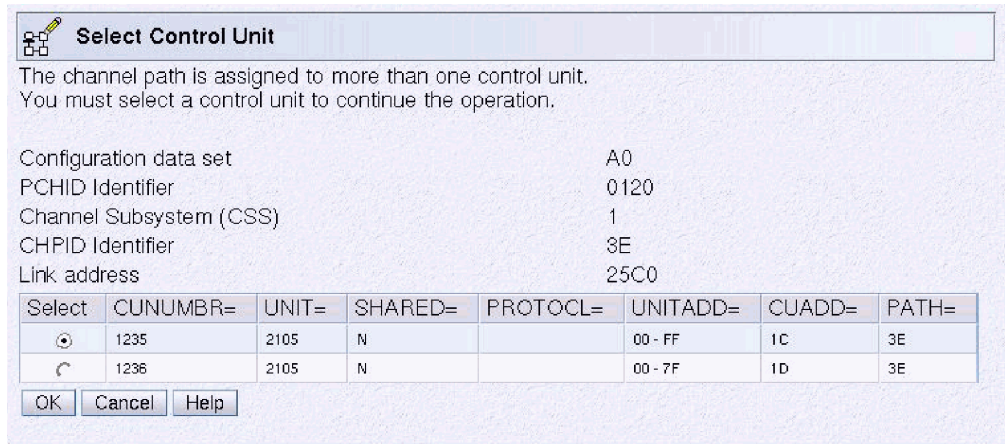
Configuration data set: A0  
PCHID Identifier: 0120  
Channel Subsystem (CSS): 1  
CHPID Identifier: 3E  
Link address: 25C0

| CUNUMBR= | UNIT= | SHARED= | PROTOCL= | UNITADD= | CUADD= | PATH= |
|----------|-------|---------|----------|----------|--------|-------|
| 1235     | 2105  | N       |          | 00 - FF  | 1C     | 3E    |
| 1236     | 2105  | N       |          | 00 - 7F  | 1D     | 3E    |

OK Help

Figure 2-34. Control Unit Information

When you select Device Information on the **Channel Path Configuration's View** menu (see Figure 2-29 on page 2-23) and the selected path (CSS.CHPID.LINK) has multiple control unit logical addresses (CUADDs), the Select Control Unit window is displayed, as shown in Figure 2-35. This window displays all the control units associated with the selected path. Select the control unit or CUADD for which you want to display device information.



**Select Control Unit**

The channel path is assigned to more than one control unit.  
You must select a control unit to continue the operation.

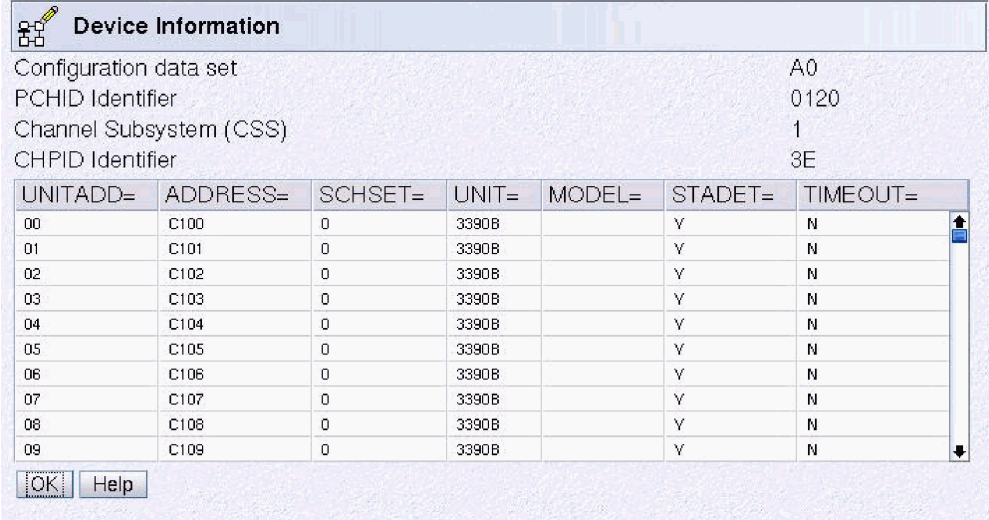
Configuration data set: A0  
PCHID Identifier: 0120  
Channel Subsystem (CSS): 1  
CHPID Identifier: 3E  
Link address: 25C0

| Select                           | CUNUMBR= | UNIT= | SHARED= | PROTOCL= | UNITADD= | CUADD= | PATH= |
|----------------------------------|----------|-------|---------|----------|----------|--------|-------|
| <input checked="" type="radio"/> | 1235     | 2105  | N       |          | 00 - FF  | 1C     | 3E    |
| <input type="radio"/>            | 1236     | 2105  | N       |          | 00 - 7F  | 1D     | 3E    |

OK Cancel Help

Figure 2-35. Select Control Unit

The Device Information window is displayed, as shown in Figure 2-36, when you select **Device Information** on the **Channel Path Configuration's View** menu (see Figure 2-29 on page 2-23) and select a unique CSS, link address, and control unit logical address (CUADD), if necessary, for the selected channel path. This window displays all the devices associated with the selected control unit and path (CSS.CHPID.LINK.CUADD).



**Device Information**

Configuration data set A0  
PCHID Identifier 0120  
Channel Subsystem (CSS) 1  
CHPID Identifier 3E

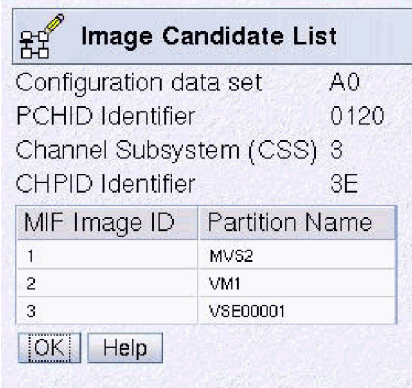
| UNITADD= | ADDRESS= | SCHSET= | UNIT= | MODEL= | STADET= | TIMEOUT= |
|----------|----------|---------|-------|--------|---------|----------|
| 00       | C100     | 0       | 3390B |        | Y       | N        |
| 01       | C101     | 0       | 3390B |        | Y       | N        |
| 02       | C102     | 0       | 3390B |        | Y       | N        |
| 03       | C103     | 0       | 3390B |        | Y       | N        |
| 04       | C104     | 0       | 3390B |        | Y       | N        |
| 05       | C105     | 0       | 3390B |        | Y       | N        |
| 06       | C106     | 0       | 3390B |        | Y       | N        |
| 07       | C107     | 0       | 3390B |        | Y       | N        |
| 08       | C108     | 0       | 3390B |        | Y       | N        |
| 09       | C109     | 0       | 3390B |        | Y       | N        |

OK Help

Figure 2-36. Device Information

## Image Candidate List

Select **Image Candidate List** to display a list of logical partitions that have authority to access the channel path. When a channel path is spanned to multiple CSSs, the Channel Subsystem Selection window is displayed, as shown in Figure 2-32 on page 2-25. Select a CSS for the channel path.



**Image Candidate List**

Configuration data set A0  
PCHID Identifier 0120  
Channel Subsystem (CSS) 3  
CHPID Identifier 3E

| MIF Image ID | Partition Name |
|--------------|----------------|
| 1            | MVS2           |
| 2            | VM1            |
| 3            | VSE00001       |

OK Help

Figure 2-37. Image Candidate List Window

## Image Access List

Select **Image Access List** to display the logical partitions that will initially have access to the channel path at logical partition activation following the **initial** power-on reset of the IOCDs. When a channel path is spanned to multiple CSSs,

the Channel Subsystem Selection window is displayed, as shown in Figure 2-32 on page 2-25. Select a CSS for the channel path.

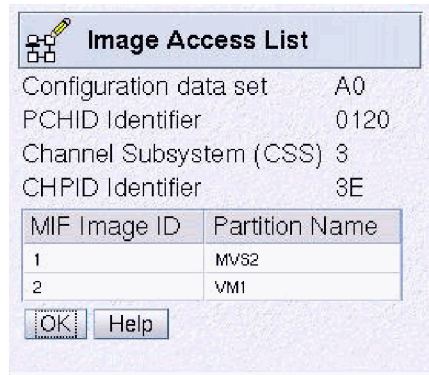


Figure 2-38. Image Access List Window

## Partition Images Configured

**Partition Images Configured** displays the channel subsystems, MIF image ID numbers, and names of logical partitions supported by the selected input/output (I/O) configuration. If the data set status is invalid, the **Partition Images Configured** option is not available.

When **Partition Images Configured** is selected from the **View** action pull-down, the names of all the partitions defined in the selected IOCDS are displayed.

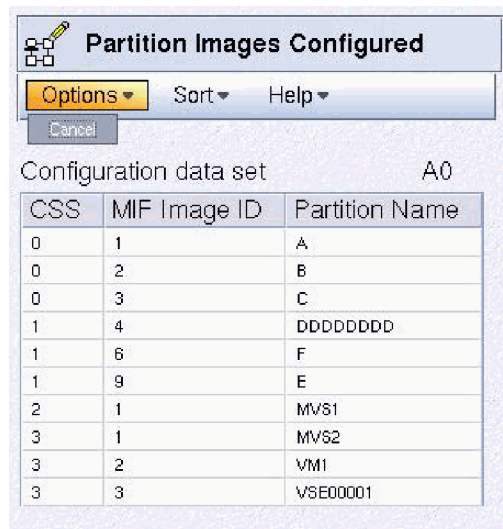


Figure 2-39. Partition Images Configured Window

## Dynamic Information

**Dynamic Information** displays the current channel subsystem hardware system area (HSA) token, the token of the selected input/output configuration data set (IOCDS), and the maximum number of devices in the IOCDS and in HSA. If the data set status is invalid, the Dynamic Information option is not available.

When **Dynamic Information** is selected from the **View** action pull-down, data pertaining to the selected IOCDS is displayed.

**Dynamic Information**

Configuration data set: A1

Data set token: PROC1 05-07-2513:54:42HCDI IODF02  
0000011138742084135442310003245F0000000000000000

Hardware system area token: PROC1 05-07-2513:54:42HCDI IODF02  
0000011138742084135442310003245F0000000000000000

Data set maximum number of devices

| Subsystem | SubchannelSet   | Maximum Number of Devices |
|-----------|-----------------|---------------------------|
| CSS0      | SubchannelSet 0 | 65280                     |
| CSS0      | SubchannelSet 1 | 8                         |
| CSS1      | SubchannelSet 0 | 30000                     |
| CSS1      | SubchannelSet 1 | 64512                     |

Hardware system area maximum number of devices

| Subsystem | SubchannelSet   | Maximum Number of Devices |
|-----------|-----------------|---------------------------|
| CSS0      | SubchannelSet 0 | 65280                     |
| CSS0      | SubchannelSet 1 | 8                         |
| CSS1      | SubchannelSet 0 | 30000                     |
| CSS1      | SubchannelSet 1 | 64512                     |

OK Help

Figure 2-40. Dynamic Information Window

The **Data set token** field displays the token information contained in the I/O configuration data set (IOCDS) selected. A **Hardware system area token** is displayed only if the system has been power-on reset using an IOCDS that had a token in it. (The token was built by the HCD tool in OS/390, z/OS, z/OS.e, or VM or the VM IOCP CMS utility option DYN was specified.)

If any dynamic I/O configuration changes have been made, the hardware system area token displayed is the current token and not the token from the power-on reset.

The **Data set maximum number of devices** displays the maximum number of devices for each logical channel subsystem and subchannel set defined in the selected IOCDS. The **Hardware system area maximum number of devices** is displayed only if the system has been power-on reset using an IOCDS that had a token in it and the power-on reset enabled dynamic I/O configuration.

## Configuration Program Level

**Input/Output Configuration Program (IOCP) Level** window displays the version, release, and level of the licensed internal code for the stand-alone input/output configuration program (IOCP) on this support element.

The **Configuration Program Level** is the current level of the Stand-Alone IOCP on the support element.

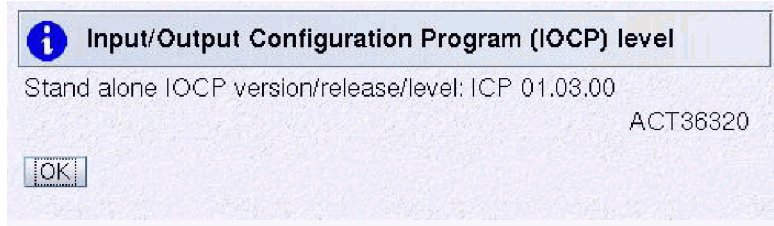


Figure 2-41. Input/Output Configuration Program (IOCP) Level Window

## Supported I/O Mask

**Supported I/O Mask** displays the hexadecimal values that identify the processor functions or channel path types. If the data set status is invalid, the **Supported I/O Mask** option is not available.

When you select **Supported I/O Mask** from the **View** action pull-down, the functions and channel path types supported by the machine are identified. The IOCDS Supported I/O Mask identifies the functions and channel path types defined in the selected IOCDS.

If the IOCDS mask contains a value not in the Machine Supported I/O mask, then a third line will display in the window for the unsupported items. The Unsupported mask items line displays which items are not supported by the machine. The machine cannot power-on reset with this IOCDS (error message ACTZ16F results).

See the information concerning CPC activation and power-on reset error in the *Input/Output Configuration Program User's Guide* (SB10-7037), for a description of the supported functions and channel types.

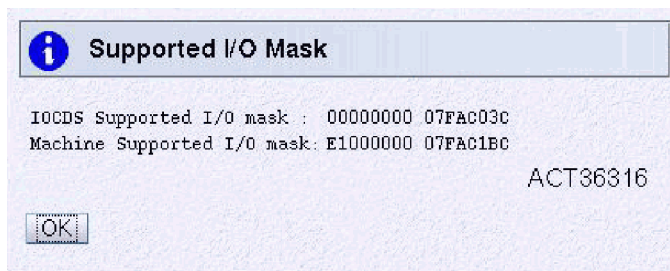


Figure 2-42. Supported I/O Mask

---

## IOCP Wait State Codes

### Enabled Wait States

During execution of the stand-alone version of IOCP, the central processor enters many enabled wait states (PSW bit 7 is on). These are normal conditions while IOCP waits for the support element to respond to IOCP requests such as a read or write of an IOCDS. If the central processor stays in an enabled wait state for more than ten minutes, other than waiting for operator input on a console, the support element is busy. You may either wait for the support element to finish or select the **Cancel** button on the window and restart IOCP at a later time. If the problem persists, contact the service representative.

### Disabled Wait States

During execution of the stand-alone version of IOCP, IOCP issues the following disabled wait state codes when the indicated conditions occur. (Note that the OS/390, z/OS, z/OS.e, VM, and VSE versions of IOCP do not issue wait state codes.) Wait State codes are hexadecimal and are stored in the low-order bytes of the address area of the PSW.

---

#### B20

**Explanation:** The operator who is running the stand-alone version of IOCP has started IOCP processing after the IOCP function has completed, or IOCP was unable to read from the support element the selected function to perform.

**Operator response:** If IOCP completed the selected function, no action is required. Otherwise, notify your system programmer.

**Problem determination:** If IOCP did not complete the selected function, save all associated output. Contact the service representative.

**Operator response:** Notify your system programmer.

**Problem determination:** Save all associated output. Contact the service representative.

---

#### B24

**Explanation:** During execution of the stand-alone version of IOCP, IOCP has encountered an error in the support element and cannot communicate with the person operating IOCP.

**Operator response:** Notify your system programmer.

**Problem determination:** Save all associated output. Contact the service representative.

---

#### B21

**Explanation:** A program-check interruption has occurred during execution of the stand-alone version of IOCP.

**Operator response:** Notify your system programmer.

**Problem determination:** Save all associated output. Contact the service representative.

---

#### B22

**Explanation:** A machine-check interruption has occurred during execution of the stand-alone version of

**Operator response:** Notify your system programmer.

**Problem determination:** Save all associated output. Contact the service representative.

---

#### B23

**Explanation:** An uncorrectable I/O error has occurred during execution of the stand-alone version of IOCP.



---

## Chapter 3. Running the Stand-Alone Version of IOCP

|                                                                          |      |
|--------------------------------------------------------------------------|------|
| Preparing for System Installation . . . . .                              | 3-2  |
| If the I/O Configuration Source Is Available at Installation Time...     | 3-2  |
| If the I/O Configuration Source is NOT Available at Installation Time... | 3-2  |
| Creating an I/O Configuration Source (IOCS) File . . . . .               | 3-2  |
| Building an Input/Output Configuration Data Set . . . . .                | 3-3  |
| Power-on Reset for IOCDS Import/Build . . . . .                          | 3-3  |
| Import an I/O Configuration Source File . . . . .                        | 3-5  |
| Build the IOCDS . . . . .                                                | 3-8  |
| Power-on Reset to Enable the IOCDS . . . . .                             | 3-10 |
| Creating a New IOCDS in a New Central Processor Complex . . . . .        | 3-10 |
| Updating an IOCDS Using the Card-Image Input Editor . . . . .            | 3-11 |

---

## Preparing for System Installation

The IOCS contains specific data about all attached control units and I/O devices. An IOCS file must contain ASCII data. It must either be in DOS file format or have been compressed. If the file is compressed, it must contain a single IOCS file. The IOCS file name must have a maximum of eight characters and the file extension must have a maximum of 3 characters.

The IOCS is the input to the *I/O configuration program (IOCP)*. The IOCP loads the IOCS into the processor and uses it to build the *I/O configuration data set (IOCDS)*.

**Note:** If you are upgrading to a System z9 processor, you can specify CHECKCPC=NO in the PARM parameter of the EXEC statement for IOCP on OS/390, z/OS, z/OS.e, and VSE or specify CMS option NOCHKCPC for IOCP on VM. These options allow you to write the IOCDS for your new processor to your current processor before the upgrade. You can also write an IOCDS when preparing to upgrade from one of the following processors. (Inform the service representative which IOCDS should be used after the upgrade.)

- 2064 zSeries® 900 model CPCs at EC J10638 or later
- 2066 zSeries 800 model CPCs (all ECs)
- 2084 zSeries 990 model CPCs (all ECs)
- 2086 zSeries 890 model CPCs (all ECs).

### If the I/O Configuration Source Is Available at Installation Time...

If the I/O configuration source file (IOCS) has been previously prepared, then you can begin the procedure of importing it to the support element and generating an IOCDS. Follow the steps provided in “Building an Input/Output Configuration Data Set” on page 3-3.

### If the I/O Configuration Source is NOT Available at Installation Time...

If **no** I/O configuration source file (IOCS) is available, then you **must** create one at installation time. The *Input/Output Configuration Program User's Guide*, SB10-7037, provides instructions on the card-image format and syntax.

**Note:** If the I/O Configuration Source is NOT Available, Installation Time is increased significantly.

#### Creating an I/O Configuration Source (IOCS) File

The IOCS can be created on a diskette, as follows:

- After it is created, go to “Building an Input/Output Configuration Data Set” on page 3-3.
- If the source is to be saved on diskette, you can use any personal computer or equivalent, with DOS or an equivalent ASCII file editor to create the file. You can also use the stand-alone IOCP editor on the support element to input the I/O definition. Procedures for using the support element editor are found in “Creating a New IOCDS in a New Central Processor Complex” on page 3-10.

If a default or old source file already exists, you may use the **Delete Source File** action to clear the file or use the editor actions to delete the contents of the selected source file rather than create a new one from scratch. Procedures are found in “Updating an IOCDS Using the Card-Image Input Editor” on page 3-11.

For I/O configuration examples, refer to the *Input/Output Configuration Program User's Guide*, SB10-7037.

---

## Building an Input/Output Configuration Data Set

If an I/O configuration source file has been prepared on a diskette, then proceed with the following steps:

### Power-on Reset for IOCDS Import/Build

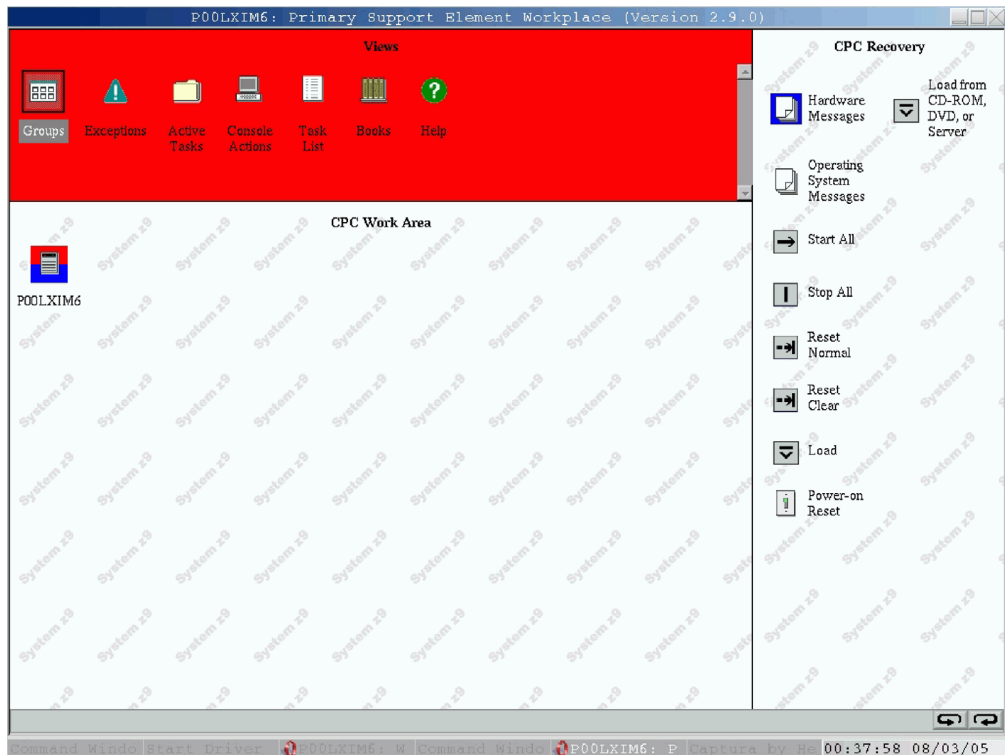
#### Important!

The procedures that follow were written with instructions for use with the mouse. For details on mouse, keyboard, and mnemonic usage, see *Support Element Operations Guide* for your system.

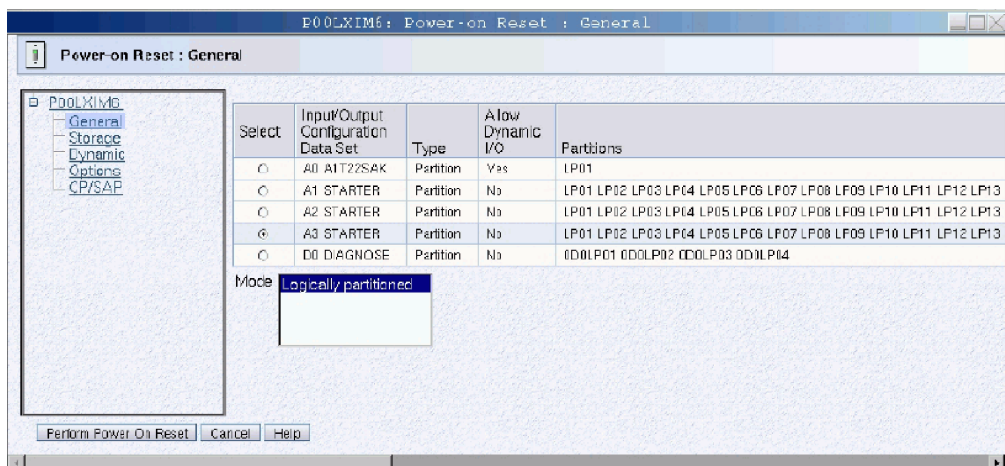
If you want to change a *Write-Protected* data set, select the data set, then select **Options** from the menu bar and **Disable Write Protection** from the pull-down.

Power-On Reset will be prevented if the support element has locked out disruptive tasks.

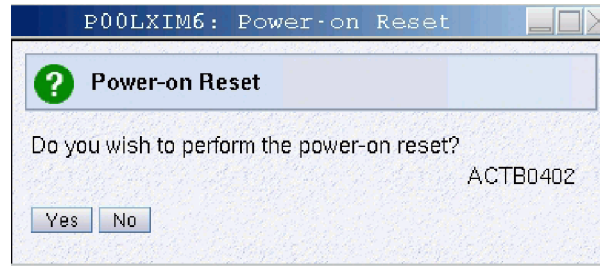
|   | User Action                                                                          | Result                                                           |
|---|--------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 1 | From the Support Element Workplace window, open <b>Task List</b> from <b>Views</b> . | The <b>Task List Work Area</b> is displayed.                     |
| 2 | Open <b>CPC Recovery</b> from the <b>Task List Work Area</b> .                       | The <b>CPC Recovery</b> task list is displayed in the task area. |
| 3 | Open <b>Groups</b> from <b>Views</b> .                                               | The <b>Groups Work Area</b> is displayed.                        |
| 4 | Open <b>CPC</b> from <b>Groups</b> .                                                 | The <b>CPC Work Area</b> is displayed.                           |



|   | User Action                                                                           | Result                                           |
|---|---------------------------------------------------------------------------------------|--------------------------------------------------|
| 5 | Select a CPC icon and open the <b>Power-on Reset</b> task under <b>CPC Recovery</b> . | The Power-on Reset: General window is displayed. |



|   | User Action                            | Result                                               |
|---|----------------------------------------|------------------------------------------------------|
| 6 | Select the desired IOCDs.              |                                                      |
| 7 | Select <b>Perform Power On Reset</b> . | The Power-on Reset confirmation window is displayed. |



|    | User Action                                                                                                                                                                              | Result                                                                                                                                                              |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  | Select <b>Yes</b> .                                                                                                                                                                      | The Power-on Reset Progress window is displayed. A message is displayed when the reset completes.                                                                   |
| 9  | Select <b>OK</b> .                                                                                                                                                                       | <i>End of power-on.</i><br><b>Note:</b> Must have an active Image.                                                                                                  |
| 10 | Open <b>Daily</b> from the <b>Task List Work Area</b> .                                                                                                                                  | The <b>Daily</b> task list is displayed in the task area.                                                                                                           |
| 11 | Open <b>Groups</b> from <b>Views</b> .                                                                                                                                                   | The <b>Groups Work Area</b> is displayed.                                                                                                                           |
| 12 | Open <b>Images</b> from <b>Groups Work Area</b> .                                                                                                                                        | The <b>Images Work Area</b> is displayed.                                                                                                                           |
| 13 | Select the <b>Image</b> icon and open the <b>Activate</b> task under <b>Daily</b> .<br><b>Note:</b> The image must be activated for ESA/390 mode and with a minimum of 128MB of storage. | The Activate Task Confirmation window is displayed.<br><b>Note:</b> If logged on in <i>service mode</i> the <i>service status</i> must be set to activate an image. |
| 14 | Select <b>Yes</b> .                                                                                                                                                                      | The Activate Progress window is displayed.                                                                                                                          |
| 15 | Select <b>OK</b> , then go to "Import an I/O Configuration Source File" on page 3-5.                                                                                                     | <b>End of power-on for IOCDS Import/Build.</b>                                                                                                                      |

## Import an I/O Configuration Source File

If you have the input file on diskette, follow these steps:

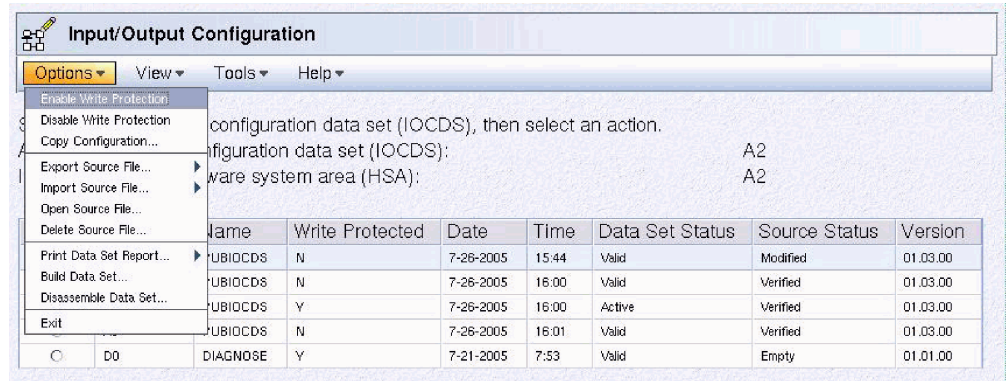
**Note:** The steps for importing a source file from the Hardware Management Console diskette are similar to those for importing a source file from an FTP location.

|   | User Action                                                                                                                                                                                  | Result                                                       |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| 1 | From the Hardware Management Console Workplace window, open <b>Task List</b> from <b>Views</b> .                                                                                             | The <b>Task List Work Area</b> is displayed.                 |
| 2 | Open <b>Recovery</b> from the <b>Task List Work Area</b> .                                                                                                                                   | The <b>Recovery</b> task list is displayed in the task area. |
| 3 | Open <b>Groups</b> from <b>Views</b> .                                                                                                                                                       | The <b>Groups Work Area</b> is displayed.                    |
| 4 | Open the group that contains the CPC in which you are interested.                                                                                                                            | The CPC icon is displayed.                                   |
| 5 | Select the CPC icon and open the <b>Single Object Operations</b> task under <b>Recovery</b> .                                                                                                | The Support Element Workplace window is displayed.           |
| 6 | From the Support Element Workplace window initiate the <b>Input/Output (I/O) Configuration</b> task. If necessary, refer to the procedure described in “Controlling the Program” on page 2-2 | The Input/Output Configuration window is displayed.          |

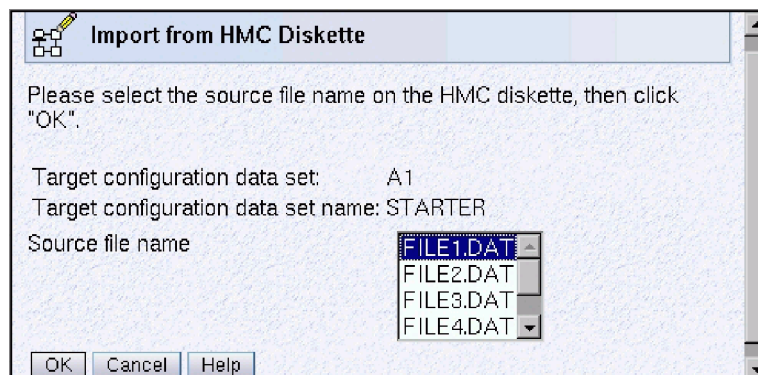
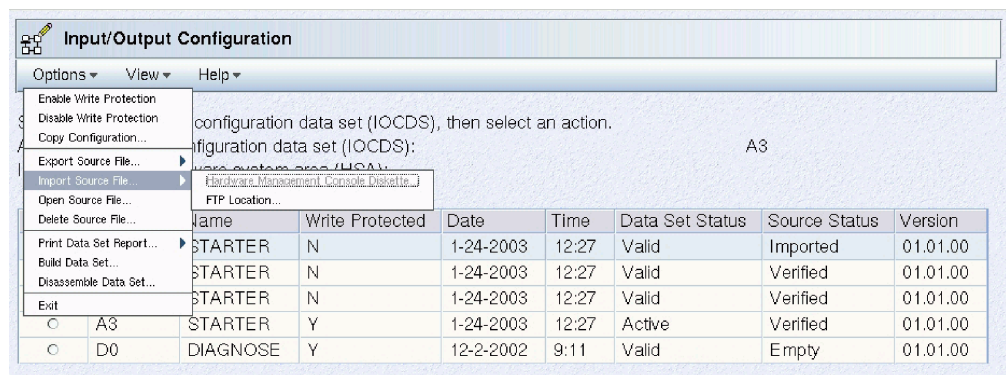
Select an input/output configuration data set (IOCDS), then select an action.  
Active input/output configuration data set (IOCDS): A2  
IOCDS matching hardware system area (HSA):

| Select                           | Data Set | Name     | Write Protected | Date      | Time  | Data Set Status | Source Status | Version  |
|----------------------------------|----------|----------|-----------------|-----------|-------|-----------------|---------------|----------|
| <input checked="" type="radio"/> | A0       | STARTER  | N               | 1-24-2003 | 12:27 | Valid           | Verified      | 01.01.00 |
| <input type="radio"/>            | A1       | STARTER  | N               | 1-24-2003 | 12:27 | Valid           | Verified      | 01.01.00 |
| <input type="radio"/>            | A2       | STARTER  | Y               | 1-24-2003 | 12:27 | Active          | Verified      | 01.01.00 |
| <input type="radio"/>            | A3       | STARTER  | N               | 1-24-2003 | 12:27 | Valid           | Verified      | 01.01.00 |
| <input type="radio"/>            | D0       | DIAGNOSE | Y               | 12-2-2002 | 9:11  | Valid           | Empty         | 01.01.00 |

|   | User Action                                                                                                                                                                   | Result                                                  |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 7 | Select any data set that is NOT write protected.<br><b>Note:</b> The data set you select will be replaced by the file you are going to import.<br><br>Select <b>Options</b> . | The <b>Import Source File</b> selections are displayed. |



|   | User Action                                                                                                                                                                                                                               | Result                                            |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| 8 | <p>Select <b>Import Source File</b>.</p> <p>Select <b>Hardware Management Console diskette</b>.</p> <p><b>Note:</b> The active selection depends on if you are operating from the support element or the Hardware Management Console.</p> | The Import from HMC Diskette window is displayed. |

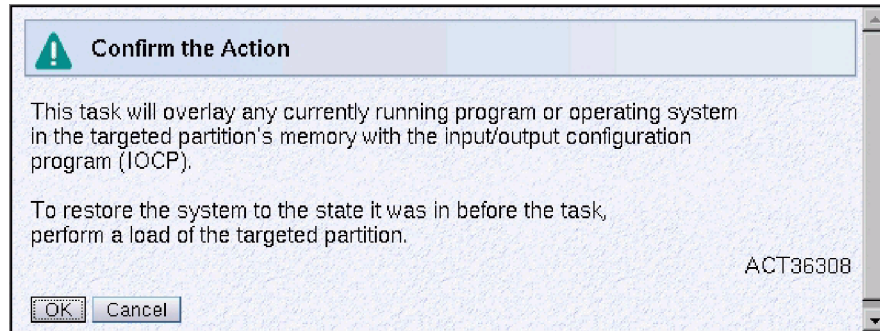


|   | User Action                                                                    | Result                                              |
|---|--------------------------------------------------------------------------------|-----------------------------------------------------|
| 9 | Select the file name and extension of the source file; then select <b>OK</b> . | The Input/Output Configuration window is displayed. |

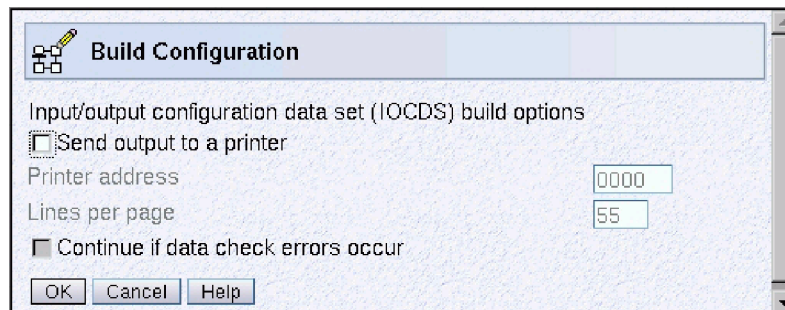
## Build the IOCDS

From the Input/Output Configuration window:

|   | User Action                                                 | Result                                                               |
|---|-------------------------------------------------------------|----------------------------------------------------------------------|
| 1 | Select <b>Options</b> , then select <b>Build Data Set</b> . | The Confirm the Action window is displayed for the first build only. |



|   | User Action        | Result                                       |
|---|--------------------|----------------------------------------------|
| 2 | Select <b>OK</b> . | The Build Configuration window is displayed. |



|   | User Action                                                                                                                                                                                                                     | Result                                                                                                                                                                                                                                                                                                                                                       |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Select the appropriate parameters then select <b>OK</b> . If desired, select <b>Send output to a printer</b> .<br><b>Note:</b> Selection is indicated by a ✓ in the check box. You can select more than one box or none at all. | The Input/Output (I/O) Configuration Progress window is displayed while the IOCP program runs. The run can take up to 12 minutes. Status messages will display to indicate the progress of the IOCDS build. The program completes, and a final IOCP status message is displayed that states whether or not the build was successful (see IOCP messages box). |

### IOCP Messages

If the build is successful, one of the following messages is displayed:

ICP500A: PROCESSING COMPLETED. CHECK PRINTER FOR LISTING OR RETURN TO EDITOR.

ICP501A: PROCESSING COMPLETED. NO PRINTER SPECIFIED-NO LISTING. PROCEED.

In case of cautions or warnings, the following message is displayed:

ICP502A: PROCESSING COMPLETED BUT HAS MESSAGE(S), RETURN TO EDITOR.

In case of errors, one of the following messages is displayed:

ICP506A: CARD INPUT ERROR(S) FOUND, RETURN TO EDITOR.

ICP507A: IOCDS GENERATION ERROR, RETURN TO EDITOR.

The IOCP messages are embedded in the source file at the line where the condition was detected. Use the **Open Source File** action to correct the condition. For an example of some typical errors, see Appendix B, "Resolving IOCP Errors," on page B-1. For more detailed error information, see *Input/Output Configuration Program User's Guide*, SB10-7037.

|   | User Action                                                                                                                                                                                                                                                                         | Result                                              |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| 4 | Select <b>OK</b> .                                                                                                                                                                                                                                                                  | The Input/Output Configuration window is displayed. |
| 5 | Do you have more data sets to install? <ul style="list-style-type: none"><li>• YES - go to back to Step 7 in "Import an I/O Configuration Source File" on page 3-5.</li><li>• NO - close the Input/Output Configuration window and go to Step 1 in the following section.</li></ul> |                                                     |

## Power-on Reset to Enable the IOCDS

|   | User Action                                                                                    | Result                                                                                            |
|---|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 1 | From the Support Element Workplace window open <b>Task List</b> from <b>Views</b> .            | The <b>Task List Work Area</b> is displayed.                                                      |
| 2 | Open <b>CPC Recovery</b> from the <b>Task List Work Area</b> .                                 | The <b>CPC Recovery</b> task list is displayed in the task area.                                  |
| 3 | Open <b>Groups</b> from <b>Views</b> .                                                         | The <b>Groups Work Area</b> is displayed.                                                         |
| 4 | Select the <b>CPC</b> icon and open the <b>Power-on Reset</b> task under <b>CPC Recovery</b> . | The Power-on Reset: General window is displayed.                                                  |
| 5 | Select the desired IOCDS.                                                                      |                                                                                                   |
| 6 | Select <b>Perform Power-on reset</b> .                                                         | The Power-on Reset confirmation window is displayed.                                              |
| 7 | Select <b>Yes</b> .                                                                            | The Power-on Reset Progress window is displayed. A message is displayed when the reset completes. |
| 8 | Select <b>OK</b> .                                                                             | <b>End of import procedure.</b>                                                                   |

---

## Creating a New IOCDS in a New Central Processor Complex

All IOCDS source data consists of RESOURCE, CHPID, CNTLUNIT, and IODEVICE statements. The ID statement is optional. All paths, control units, and I/O devices must be defined in the source file to generate an I/O configuration data set (IOCDS), which can then be used to power-on reset the processor

The user should perform the steps that create an IOCP configuration source file as part of the installation procedure for a new central processor complex.

The following example assumes that the card-image statement source deck must be entered from scratch. All of the I/O channel paths, control unit and installed device unit addresses must be defined and available. When the new input file is created, it will define the initial I/O configuration for the new processor complex. Comments will be saved.

To **create** a new IOCDS for a new central processor complex, perform the following on the support element of the central processor complex:

1. Perform a power-on reset of the system with the D0 IOCDS.
2. Activate a partition.
3. From the Support Element Workplace window initiate the **Input/Output (I/O) Configuration** task. If necessary refer to the procedure described in "Controlling the Program" on page 2-2.
4. Select the IOCDS to be created
5. Use the **Delete Source File** action under the **Options** action on the Input/Output Configuration window to remove the existing source file for the selected configuration. (If there is a default or example source, the user should check with the source owner to determine if the source should be saved by using the **Export Source File** action to move the file to a diskette).
6. Use the **Open Source File** action under the **Options** action to edit the new source file. Add the statements for the channel paths, control units, and I/O

devices. To be certain you have included all of your system's I/O devices in the IOCP statements, you should create a drawing of the physical arrangement of control units and attached devices to show all channel connections.

- The editor description begins at "Open Source File" on page 2-11

**Note:** All text must be in upper case.

- For format and syntax of the IOCP statements, see "IOCP Statements and Functions" in the *Input/Output Configuration Program User's Guide*, SB10-7037.
- Observe the following hints:
  - Enter the ID statement first. The first eight characters of the  
MSG1=  
  
parameter will be the IOCDS name displayed on the support element when the IOCDS is built.
  - Enter the RESOURCE statement next. Define each logical partition and channel subsystem (CSS) in your configuration.
  - Enter the CHPID statements. Define each physical channel path installed on your system.
  - Enter the CNTLUNIT statements. It is very important to match the  
PROTOCL=  
  
and  
UNITADD=  
  
parameters with the values set in each control unit by the system installer.
  - Enter the IODEVICE statements.

After completing the input, save the edited file and exit the editor.

7. Select the **Build Data Set** action to generate the system IOCDS. When successfully completed, the IOCDS will be written to the support element and saved on the hard disk. If the build is not successful, IOCP error messages will be inserted in the card-image statements and a copy will be saved on the support element hard disk. Return to the editor to correct the errors.
8. Exit the Input/Output Configuration window.
9. Perform a power-on reset of the system with the IOCDS written in Step 7 on page 3-11. Select the newly-created IOCDS in the power-on reset window.

---

## Updating an IOCDS Using the Card-Image Input Editor

This procedure describes how to update the I/O configuration data in an IOCDS for an installed processor complex.

To **update** the I/O configuration for a processor complex:

1. Ensure that the processor system is in a power-on reset state with an appropriate existing IOCDS.
2. From the Support Element Workplace window initiate the **Input/Output (I/O) Configuration** task. If necessary refer to the procedure described in "Controlling the Program" on page 2-2.
3. Select the IOCDS to update.
4. Check to see if the source file matches the contents of the IOCDS. (The source status will be **Verified** or **Warnings**, and the IOCDS status will be **Valid**

when the IOCDS was built from the source). If the status for the source file and the IOCDS do not match, then the source for the selected IOCDS may be different from the source used to create the IOCDS. The source file may have been imported from diskette or it may have been modified using the editor. A reconstructed source can be recreated by selecting the **Disassemble Data Set** action. The **Disassemble Data Set** action will read the selected IOCDS and create a source file equivalent to the one used to create the IOCDS.

5. If you are adding (or deleting) I/O in your configuration, then update (**Open Source File**) the input deck to reflect any new I/O configured in the processor complex.
6. Prepare the system printer if a printed output is desired. The printer must be initialized (the print/forms buffer must be loaded).
7. Select the **Build Data Set** action from the **Options** pull-down menu on the Input/Output Configuration window.
  - a. Select the appropriate parameters then select **Enter**.  
 During the build, IOCP reads the input statements, saves them as card-image data in storage, checks the syntax, validates it, and generates an IOCDS. It produces configuration reports of the IOCDS generated. (See "IOCP Statements and Functions" in the *Input/Output Configuration Program User's Guide*, SB10-7037, for more details.)  
 Messages are displayed by IOCP to give the status of the IOCDS build.
  - b. An error message is displayed if IOCP has detected errors in the card-image file. To correct the errors, select the **Open Source File** action on the I/O Configuration window after the completion pop-up message appears. Errors detected by IOCP are displayed in the editor. Errors are displayed in the form of IOCP comments that begin with \*ICP in column 1, followed by the error message number and the message text. See "IOCP Messages" in the *Input/Output Configuration Program User's Guide*, SB10-7037 for an explanation of the error messages. Correct the errors in the card-image file. It is not necessary to remove the error messages from the file. IOCP will remove the messages when no errors are detected on subsequent builds.
8. View the generated IOCDS content using the **View** action (**Channel Path Configuration** and **Device Information** windows) or analyze the configuration reports produced in Step 7a to ensure that the desired I/O configuration has been generated. If the card images need to be changed, use the editor to modify the card-image data on the processor controller and return to the **Build Data Set** process (Step 7 on page 3-12).
9. If the input deck is correct, and the build complete, the IOCDS now resides on the support element hard disk
10. Export the card-image source file to provide a backup if editing was done on the support element.
11. Exit IOCP by selecting **Options** and then **Cancel**.  
 The I/O configuration data in the new Ax IOCDS now contains your new configuration. Selecting a power-on reset, with Ax as the IOCDS parameter, activates the new configuration and makes the Ax IOCDS the configuration that the channel subsystem uses to control I/O requests. Use the **View** action to view the configuration. If necessary, refer to the procedure described in "Power-on Reset for IOCDS Import/Build" on page 3-3 to perform the power-on reset. Select the IOCDS on the power-on reset window.
12. Test the new configuration following the procedures established for your installation.

**Notes:**

- a. If you change the hardware configuration with the stand-alone version of IOCP and you use an OS/390, z/OS, or z/OS.e system, or if you use a VM system with which you've chosen to use HCM and HCD, you should make the same changes using HCM or HCD and rewrite the IOCDS before performing the power-on reset. This action ensures consistency between the software and hardware configurations and allows the CPC to be capable of dynamic I/O configuration.
- b. If you change the hardware configuration with the stand-alone version of IOCP and you use a VM system but do not use HCM and HCD, make any appropriate changes to the VM system before performing the power-on reset. If VM cannot sense all the device changes in the hardware configuration during initial program load (IPL), modify the real I/O configuration file and regenerate your operating system; or modify the system configuration file and re-IPL your operating system. This action ensures consistency between the software and hardware configurations. (The real I/O configuration file is HCPRIO. The system configuration file is SYSTEM CONFIG.)  
  
For a dynamic-capable processor, you must rewrite the IOCDS from VM using the DYN option and perform a power-on reset.
- c. For a VSE system, if you change the hardware configuration with stand-alone IOCP, you should update your software configuration to reflect the changes (modify the ASI Procedure file). This action ensures consistency between the software and hardware configurations.



---

## Appendix A. Configuration Examples

For IOCP configuration examples, see “Configuration Examples” in the *Input/Output Configuration Program User’s Guide*, SB10-7037.



---

## Appendix B. Resolving IOCP Errors

If errors are found in the IOCP source file when you try to run IOCP, IOCP messages are written in the file on the line following the statement with the error. The IOCP messages have identifiers starting with **\*ICP**. For a description of the messages, see “IOCP Messages” in the *Input/Output Configuration Program User’s Guide*, SB10-7037. To correct the errors, edit the IOCDS source file. Refer to “Open Source File” on page 2-11 for information on editing an IOCDS source file.

You may either scroll through the IOCP source file looking for IOCP messages, or use the search function in the editor. Most of the errors are missing parentheses or commas. Use similar statements without errors to determine the changes needed to correct the file. Starting at the Input/Output Configuration window, do the following:

1. Select the IOCP source
2. Select **Open Source File** from the **Options pull-down**
3. To find the first IOCP, select **Edit**; click **Find**; then search for “\*ICP”
4. Correct the statement causing the first error indication
5. Press **Find Next** to search for the next error
6. Continue to correct statements causing error and warning messages
7. When complete, press **Ctrl-S** to save the changes and try to create the IOCDS again.

**Note:** If the IOCDS source information is updated, a new IOCDS must be created and the system activated using the new IOCDS source file. To create the new IOCDS, go to the Input/Output Configuration window, select **Options** from the menu bar, and **Build Data Set** from the pull-down.

The example shown in “An Error Example” on page B-1 shows an example of a file with incorrect statements and error messages.

---

### An Error Example

The following shows an example of an IOCP source file after an IOCDS build was attempted. The file contains several syntax errors. The error messages inserted by IOCP are emphasized.

For an explanation of the errors in the file, refer to “Explanation of Errors in Example” on page B-2.

```

RESOURCE PART=(CSS(0),LP01,LP02,LP03,LP04,LP05,LP06)
*
CHIPID PCHID=100,PATH=(CSS(0),00),TYPE=CNC,PART=LP01,SWITCH=30
CHIPID PCHID=101,PATH=(CSS(0),01),TYPE=CNC,PART=LP01,SWITCH=31
CHIPID PCHID=102,PATH=(CSS(0),02),TYPE=CNC,PART=LP01,SWITCH=32
CHIPID PCHID=103,PATH=(CSS(0),03),TYPE=CNC,PART=LP02,SWITCH=33
CHIPID PCHID=104,PATH=(CSS(0),04),TYPE=CNC,PART=LP02,SWITCH=34
CHIPID PCHID=105,PATH=(CSS(0),05),TYPE=CNC,PART=LP02,SWITCH=35
CHIPID PCHID=106,PATH=(CSS(0),06),TYPE=CVC,PART=LP03
CHIPID PCHID=107,PATH=(CSS(0),07),TYPE=CVC,PART=LP03
CHIPID PCHID=108,PATH=(CSS(0),08),TYPE=CBY,PART=LP04
CHIPID PCHID=109,PATH=(CSS(0),09),TYPE=CBY,PART=LP04
CHIPID PCHID=10A,PATH=(CSS(0),0A),TYPE=CNC,PART=LP04
CHIPID PCHID=10B,PATH=(CSS(0),0B),TYPE=CNC,PART=LP05
CHIPID PCHID=10C,PATH=(CSS(0),0C),TYPE=CNC,PART=LP05
CHIPID PCHID=10D,PATH=(CSS(0),0D),TYPE=CNC,PART=LP05
CHIPID PCHID=10E,PATH=(CSS(0),0E),TYPE=CTC,PART=LP06,SWITCH=3E
*
CNTLUNIT CUNUMBR=100,PATH=(CSS(0),00),UNITADD=((00,4)),UNIT=CNC,      *
        LINK=10
IODEVICE ADDRESS=1000,CUNUMBR=100,UNIT=CNC,STADET=Y
*
CNTLUNIT CUNUMBR=101,PATH=(CSS(0),01),UNITADD=(10,4)),UNIT=CNC,      *
        LINK=11
*ICP ICP114I DELIMITER ERROR, EXPECT LEFT PARENTHESIS - 10,4)),U
IODEVICE ADDRESS=1010,CUNUMBR=101,UNIT=CNC,STADET=Y
*
CNTLUNIT CUNUMBR=102,PATH=(CSS(0),02),UNITADD=((20,)),UNIT=CNC,      *
        LINK=12
*ICP ICP125I PARAMETER CONTAINS NON-NUMERIC CHARACTERS - )),UNIT=
IODEVICE ADDRESS=1020,CUNUMBR=102,UNIT=CNC,STADET=Y
*
CNTLUNIT CUNUMBR=104,PATH=(CSS(0),04),UNITADD=((40,4))UNIT=CNC,      *
        LINK=14
*ICP ICP112I DELIMITER ERROR, EXPECT BLANK OR COMMA - UNIT=CNC
IODEVICE ADDRESS=1040,CUNUMBR=104,UNIT=CNC,STADET=Y
*
CNTLUNIT CUNUMBR=105,PATH=(CSS(0),05),UNITADD=((50,4),UNIT=CNC,      *
        LINK=15
*ICP ICP114I DELIMITER ERROR, EXPECT LEFT PARENTHESIS - UNIT=CNC
IODEVICE ADDRESS=1050,CUNUMBR=105,UNIT=CNC,STADET=Y

```

## Explanation of Errors in Example

The following corrections are required to make the IOCP source file shown in “An Error Example” on page B-1 build an IOCDs without errors.

### First error

Add a left parenthesis to UNITADD - UNITADD=((10,4)),

### Second error

Add the proper value to UNITADD - UNITADD=((20,4)),

### Third error

Add a comma after UNITADD - UNITADD=((40,4)),UNIT=CNC

### Fourth error

Add a right parenthesis to UNITADD - UNITADD=((50,4)),

---

## Appendix C. Stand-Alone IOCP Support Element Messages

The following messages are displayed by the Support Element (SE) when executing various stand-alone IOCP operations. The Problem Determination in some messages describes the recommended action to correct the problem.

---

### **IQZ1100I      LOADING THE STAND-ALONE IOCP CODE.**

**Explanation:** This message indicates that the stand-alone IOCP program is being transferred from the SE to the system memory. The program is loaded starting at the logical partition address zero.

---

### **IQZ1101I      CANCEL RECEIVED. STOPPING THE STAND-ALONE IOCP PROGRAM.**

**Explanation:** This message indicates that the stand-alone IOCP program operation is being canceled at the request of the user.

---

### **IQZ1102I      READING THE CARD-IMAGE INPUT FILE FROM THE SUPPORT ELEMENT.**

**Explanation:** This message indicates that the stand-alone IOCP program is transferring the IOCP source file from the SE to the system memory.

---

### **IQZ1103I      READING THE CONFIGURATION DATA SET FROM THE SUPPORT ELEMENT.**

**Explanation:** This message indicates that the stand-alone IOCP program is transferring the IOCDs file from the SE to the system memory.

---

### **IQZ1104I      SYNTAX AND VALUE CHECKING THE CARD IMAGE STATEMENTS.**

**Explanation:** This message indicates that the stand-alone IOCP program is parsing the IOCP source file in system memory to perform the necessary checks and validation.

---

### **IQZ1105I      PRINTING OR WRITING THE I/O CONFIGURATION REPORTS.**

**Explanation:** This message indicates that the stand-alone IOCP program is transferring a formatted report of the IOCDs from system memory to either a channel attached printer or a channel attached tape.

---

### **IQZ1106I      CREATING A CARD-IMAGE INPUT FILE FROM THE CONFIGURATION DATA SET.**

**Explanation:** This message indicates that the stand-alone IOCP program is parsing a selected IOCDs file and is creating an equivalent source file based on

the contents of the IOCDs file.

---

### **IQZ1107I      WRITING THE CONFIGURATION DATA SET TO THE SUPPORT ELEMENT.**

**Explanation:** This message indicates that the stand-alone IOCP program is transferring the IOCDs file from system memory to the Support Element.

---

### **IQZ1108I      WRITING THE CARD-IMAGE INPUT FILE TO THE SUPPORT ELEMENT.**

**Explanation:** This message indicates that the stand-alone IOCP program is transferring the IOCP source file from the system memory to the Support Element.

---

### **IQZ1109I      PREPARING THE ENVIRONMENT FOR IOCP LOAD. (SYSTEM RESET CLEAR)**

**Explanation:** This message indicates that the stand-alone IOCP program is requesting a "system reset clear" for the targeted logical partition.

---

### **IQZ1110I      READING THE CARD-IMAGE INPUT FILE FROM CHANNEL ATTACHED TAPE.**

**Explanation:** This message indicates that the stand-alone IOCP program is transferring the IOCP source file from a channel attached tape to the system memory.

---

### **IQZ1111I      WRITING THE CARD-IMAGE INPUT FILE TO CHANNEL ATTACHED TAPE.**

**Explanation:** This message indicates that the stand-alone IOCP program is transferring the IOCP source file from system memory to a channel attached tape.

---

### **IQZ1052A      INVALID DATA IN THE STAND ALONE CONTROL BLOCK FIELD = %1 CONTENT=%2 HEX. IOCP TERMINATED.**

**Explanation:** This is an error condition.

**Problem determination:** Check your selections and entry field data and retry the operation. If the failure persists, copy the content of this message and contact your service representative. The message number and the %1 and %2 portion of the message will be of value

to IBM support in resolving the problem.

---

**IQZ1053I      AN INTERNAL ERROR HAS  
OCCURRED. STAND ALONE IOCP  
CANNOT PROCEED.**

**Explanation:** This is an error condition.

**Problem determination:** Please check your selections and entry field data and then retry the operation. If the failure persists, contact your service representative.

---

**IQZ1054I      THE PROCESSOR IS NOT  
OPERATIONAL.**

**Explanation:** The stand-alone IOCP cannot execute unless the machine is powered on and the targeted Processing Unit is operational.

**Problem determination:** Perform a POR to make the Processing Unit operational. If a POR cannot be performed, contact your service representative.

---

**IQZ1055I      THE SYSTEM IS NOT POWERED-ON.**

**Explanation:** The stand-alone IOCP cannot execute unless the machine is powered on and in a POR complete state.

**Problem determination:** Perform a POR to make the Processing Unit operational. If a POR cannot be performed, contact your service representative.

---

**IQZ1056I      THE SYSTEM IS NOT IN A  
POWER-ON-RESET STATE.**

**Explanation:** The stand-alone IOCP cannot execute unless the machine is powered on and in a POR complete state.

**Problem determination:** Perform a POR to make the Processing Unit operational. If a POR cannot be performed, contact your service representative.

---

## Appendix D. Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

*IBM Director of Licensing  
IBM Corporation  
North Castle Drive  
Armonk, NY 10504-1785 U.S.A.*

**The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local laws:**

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

---

## Trademarks and Service Marks

The following terms are trademarks of the International Business Machines Corporation in the United States or other countries of both:

- IBM
- ESCON
- FICON
- ibm.com
- OS/390
- Resource Link
- System z
- System z9
- VSE/ESA
- z/OS
- z/VSE
- z9
- zSeries
- z/VM.

Java and all Java-based trademarks and logos are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Other company, product, and service names may be trademarks or service marks of others.

---

## Electronic Emission Notices

The following statement applies to this IBM product. The statement for other IBM products intended for use with this product will appear in their accompanying manuals.

### Federal Communications Commission (FCC) Statement

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions contained in the installation manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or

television interference caused by using other than recommended cables and connectors, by installation or use of this equipment other than as specified in the installation manual, or by any other unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### **Canadian Department of Communications Compliance Statement**

This Class A digital apparatus complies with Canadian ICES-003.

#### **Avis de conformité aux normes du ministère des Communications du Canada**

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

#### **The United Kingdom Telecommunications Act 1984**

This apparatus is approved under General Approval number NS/G/1234/J/100003 for indirect connections to public telecommunications systems in the United Kingdom.

#### **European Union (EU) Electromagnetic Compatibility Directive**

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

#### **EC Declaration of Conformity (In German)**

**Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 18. September 1998 (bzw. der EMC EG Richtlinie 89/336).**

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die IBM Deutschland GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 4 Abs. (1) 4:

**Das Gerät erfüllt die Schutzanforderungen nach EN 55022 und EN 55022 Klasse A.**

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden: "Warnung: dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen."

Anmerkung:

Um die Einhaltung des EMVG sicherzustellen, sind die Geräte wie in den IBM Handbüchern angegeben zu installieren und zu betreiben.

#### **Taiwan Class A Compliance Statement**

**WARNING:** This is a Class A product. In a domestic environment this product may cause radio interference in which case the user will be required to take adequate measures.

警告使用者：  
這是甲類的資訊產品，在  
居住的環境中使用時，可  
能會造成射頻干擾，在這  
種情況下，使用者會被要  
求採取某些適當的對策。

#### **Japan Class A Compliance Statement**

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

#### **Korean Class A Compliance Statement**

이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

---

# Index

## A

A0, A1, A2, and A3 IOCDS 1-5

## B

build an IOCDS, how to 3-3  
build an IOCDS, task description 2-18  
build options 2-18  
build process, description 1-5

## C

card-image input file, creating 3-2  
channel path information 2-24  
codes, wait state 2-31  
configuration examples A-1  
configuration program level 2-29  
configuration source deck, creating 3-2  
copy an IOCDS, task description 2-8  
correcting build errors B-1  
create an IOCDS, task description 2-18

## D

D0 IOCDS 1-5  
delete a source file, task description 2-16  
device information 2-24  
disabled wait states 2-31  
disassemble an IOCDS, task description 2-21

## E

edit a source file, how to 3-10  
edit a source file, task description 2-11  
editing an IOCDS source file  
    using the edit actions  
        editing an IOCDS source file 2-14  
    using the file actions 2-13  
editors for creating I/O configuration source 3-2  
editors, support element versus. remote console 2-11  
enabled wait states 2-31  
error messages C-1  
errors, resolving B-1  
export a source file, task description 2-8

## G

generate an IOCDS, how to 3-3  
generate an IOCDS, task description 2-18

## I

I/O configuration source file, defined 3-2  
image access list 2-27  
image candidate list 2-23, 2-24, 2-27  
import a source file, how to 3-5

import a source file, task description 2-10  
input/output configuration data sets (IOCDS)  
    copy an IOCDS 2-8  
    write protection 2-7  
Input/Output configuration data sets (IOCDS)  
    build process described 1-5  
input/output configuration data sets (IOCDSs)  
    building one from scratch 3-10  
    building/creating, how to 3-3  
    building/creating, task description 2-18  
    channel path configuration 2-24  
    device information 2-24  
    disassemble 2-21  
    LPAR mode 2-18  
    printing a report 2-16  
    printing build output 2-19  
    updating an existing data set 3-11  
    viewing partition names 2-28  
    viewing token information 2-29  
input/output configuration program (IOCP)  
    editor messages 3-9  
    panel navigation 2-4  
    resolving source file errors B-1  
    source deck  
        creating 3-2  
    wait state codes 2-31  
Input/Output configuration program (IOCP)  
    build process described 1-5  
    starting the process 1-3  
    starting the program 2-2  
    uses of 1-2  
    when to use 1-2  
    why it exists 1-2  
input/output configuration source files (IOCDSs)  
    creating 3-2  
    deleting 2-16  
    examples A-1  
    exporting, task description 2-8  
    importing, task description 2-10  
    opening/editing 2-11  
    required input for the IOCP 3-2  
installation of system, preparing for 3-2

## L

logically partitioned IOCDS 2-18

## M

messages, error and status C-1

## N

navigating IOCP panels 2-4

## O

open a source file, task description 2-11

## P

panel navigation 2-4

panel titles

- build configuration data set 3-8

- channel path configuration 2-22

- configuration task in progress

  - error message 2-20

  - successful message 2-20

  - warning message 2-20

- confirm the (build) action 2-7

- confirm the (power-on reset) action 3-4

- confirm the action 3-8

- control unit information 2-25

- copy configuration 2-8

- device information 2-26

- editor, support element

  - edit actions pull-down 2-14

  - file actions pull-down 2-13

- import (source files) 3-6

- input/output configuration 2-4, 2-5, 3-6

- input/output configuration, options pull-down 2-6

- input/output configuration, view pull-down 2-22

- panels

  - edit IOCDS card-image data 2-12

- partition names in the IOCDS 2-28

- power-on reset 3-4

- select a link address 2-25

- support element workplace, CPC configuration

  - tasks 2-4

- support element workplace, CPC recovery 3-3

- support element workplace, daily tasks lists 2-4

- token information in the IOCDS 2-29

partition names in the IOCDS 2-28

printing an IOCDS report 2-16

printing build output 2-19

purpose of the IOCP 1-2

## R

reports for an IOCDS 2-16

resolving source file errors B-1

## S

sample I/O configurations A-1

source deck

- examples A-1

source deck, creating 3-2

starter IOCDS

- defined 1-4

starter IOCDS

- used for creating a new IOCDS 3-10

starting the IOCP 2-2

statement source file, creating 3-2

status messages C-1

supported I/O mask 2-30

system installation, preparing for 3-2

## T

token information in the IOCDS 2-29

## U

updating an IOCDS 3-11

## V

view channel path configuration 2-24

view device information 2-24

view partition names 2-28

view token information 2-29

## W

wait state codes 2-31

write protection (for an IOCDS) 2-7





Printed in USA

SB10-7152-01

