

Onyx® InfiniteReality™ Digital Display Option Installation Guide

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FCC Warning

This equipment has been tested and found compliant 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 instruction 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.

Attention

This product requires the use of external shielded cables in order to maintain compliance pursuant to Part 15 of the FCC Rules.

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Document Number 108-0176-001**

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Mountain View, California**

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About This Guide

This document is intended to provide SGI System Support Engineers (SSEs) and SGI factory authorized personnel with the basic information needed to install the Onyx InfiniteReality Digital Display Option™ board set in Onyx® desktside and rackmount systems. The manual is organized as follows:

- Chapter 1, “Digital Display Option Overview,” describes the necessary hardware configurations for a successful Digital Display Option board set installation. It provides a product overview and describes a list of applicable parts.
- Chapter 2, “Installing the Digital Display Option,” describes the installation procedures required to unpack, cable, and install the Digital Display Option board set in Onyx desktside and rackmount systems.

It is recommended that you start at the beginning of this document to familiarize yourself with the features and overview of the hardware option. Afterwards, proceed to the installation chapter.

System installation manuals for the Onyx products may provide additional helpful hardware and software information.

Chapter 1

Digital Display Option Overview

This chapter provides a product overview and a list of applicable parts.

1.1 Digital Display Option Product Description

The Onyx Infinite Reality Digital Display Option (DDO) is a kit that replaces a standard DG4-2 board to provide specialized, high-resolution, digital imagery capabilities for Onyx deskside and rackmount systems.

The DDO kit consists of a Digital Video Port (DVP) I/O panel connector, DVP internal cable, external CrayLink cable, and a DDO board set. (The DDO board set is composed of a DG4-2 board with an attached DVP1 daughter card.)

The DDO board set is installed in the same chassis slot as the original DG4 board. An internal DVP cable connects the DDO board set to an external CrayLink cable via the DVP I/O panel connector. The CrayLink cable is connected to specialized, digital imagery equipment that allows high-resolution graphics emulation. Figure 1-1 shows the DDO board set and its connectors.

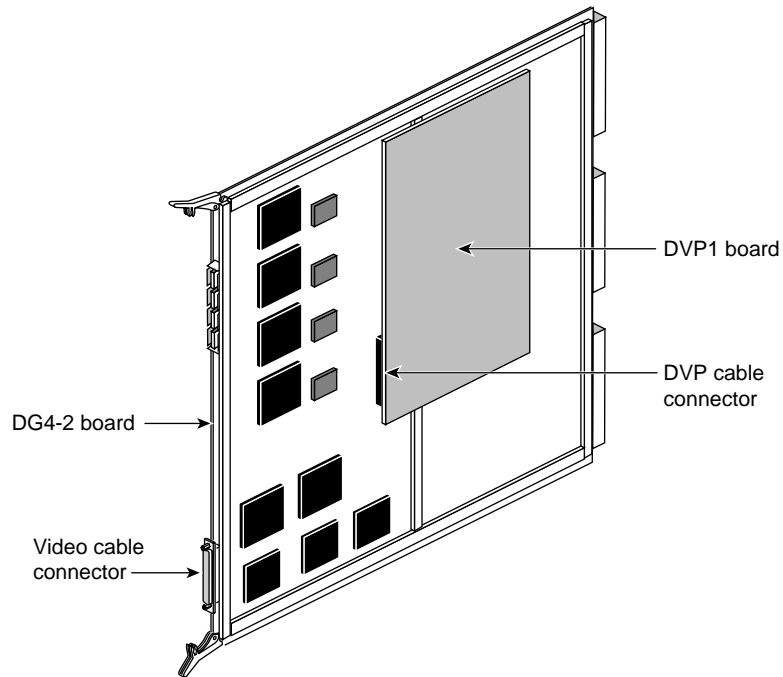


Figure 1-1 Digital Display Option Board Set

1.2 Unpacking and Checking the Parts

Read this section for information on unpacking and checking the DDO board set parts. Before beginning the installation procedure, verify that all parts necessary for installation are present. See Figure 1-2 and the following list:

- DG4-2 board with DVP1 daughter card (P/N 013-2070-001)
- DVP I/O panel connector (P/N 030-1140-001)
- DVP internal cable (P/N 018-0699-001)
- Craylink cable (P/N 018-0579-001)
- Installation Guide (P/N 108-0176-001)

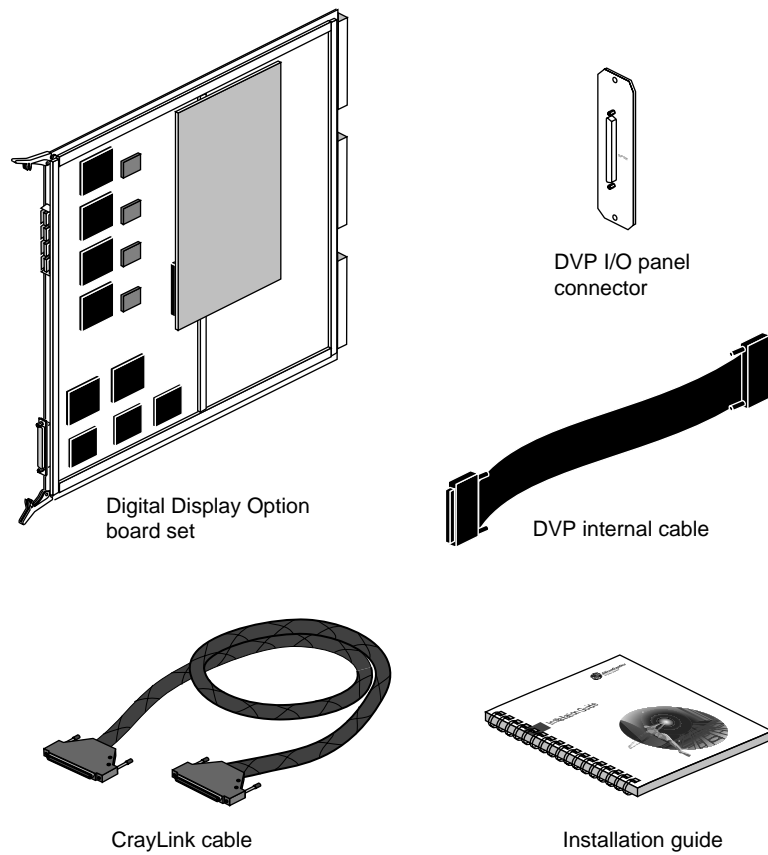


Figure 1-2 Digital Display Option Kit

1.3 Restrictions and Important Notes

The DVP1 daughter card is designed for use with a DG4-2 board only. The Digital Display Option does not support Onyx systems configured with DG4-8 boards.

1.4 Safety



Read these safety statements carefully before you install or remove any part of the system.

Warning: Installation of this product requires specific training and technical knowledge. These instructions have been provided for the use of Silicon Graphics system support engineers (SSEs) or Silicon Graphics trained and authorized personnel only. This equipment uses electrical power internally that is hazardous if the equipment is improperly assembled or disassembled.

Caution: This equipment is extremely sensitive to damage from electrostatic discharge (ESD), an electrical charge caused by the buildup of electrical potential on clothing and other materials. You must use the following ESD preventive measures:

- Attach a ground strap to your wrist when connecting/disconnecting boards.
- Ensure that you and all electrical equipment that you handle during this installation are at ground potential to avoid damage from ESD.
- Keep the boards in the provided antistatic bags until they are needed.
- Do not place boards on top of the antistatic bag unless the outside of the bag also has antistatic protection. If you are not sure that the outside of the bag is protected, place the boards on top of an antistatic mat.
- Remove a board from its antistatic bag only when you are properly grounded to the chassis ground with a ground strap.
- Do not disconnect the power cord from the wall socket *or* the chassis if you are servicing a system or installing a hardware upgrade. You will lose the system ground and could damage the equipment as a result.
- Do not use an ohmmeter on the boards as ICs and other sensitive parts may be damaged.

Chapter 2

Installing the Digital Display Option

2.1 Overview

This chapter describes how to install the Digital Display Option (DDO) board set in Onyx desktside and rackmount systems.

2.2 Digital Display Option Installation Summary

The installation procedure is divided into the following steps:

1. Powering down the system
2. Installing the DVP I/O panel connector on the I/O door
3. Removing the existing DG4 board
4. Removing the cable clip (Onyx desktside system only)
5. Installing the replacement DDO board set in the chassis
6. Attaching the internal cables and closing the chassis
7. Restarting the system and installing the DDO patch (# 1808)
8. Testing the installation

Additional information about replacing other circuit boards can be found in the following Silicon Graphics documents:

- *InfiniteReality Graphics Upgrade Installation Instructions for Desktside and Rackmount Onyx Systems* (108-0132-001)
- *CHALLENGE/Onyx Desktside Installation Instructions* (108-7039-xxx)
- *CHALLENGE/Onyx XL Rackmount Installation Instructions* (108-7042-xxx)
- *CHALLENGE and Onyx Retrofit Instructions* (domestic version: 802-0107-002; international version: 802-0106-002)
- *Challenge/Onyx Rackmount Third Cardcage (CC3) Upgrade Instructions* (release note, 802-0105-xxx): setting up third cardcage for Onyx rackmount

If applicable, be sure you have other pertinent release notes and Field Information Bulletins.

2.3 Installing the Digital Display Option in Onyx Deskside Systems

2.3.1 Installing the DVP I/O Panel Connector

To install the DVP I/O panel connector in the I/O door, see Figure 2-1 and complete the following steps:

1. With the customer's help, make sure all users are off the system. Shut down and power off the system.
2. Open the rear chassis door.
3. Open the rear metal I/O panel to expose the chassis slots.
4. Remove a slot panel cover, preferably from the middle row. (Be sure to select a slot panel cover conveniently located near the DG4 board, which will provide adequate distance for the DVP internal cable connection.)
5. Attach the DVP I/O panel connector to the uncovered slot with mounting screws.

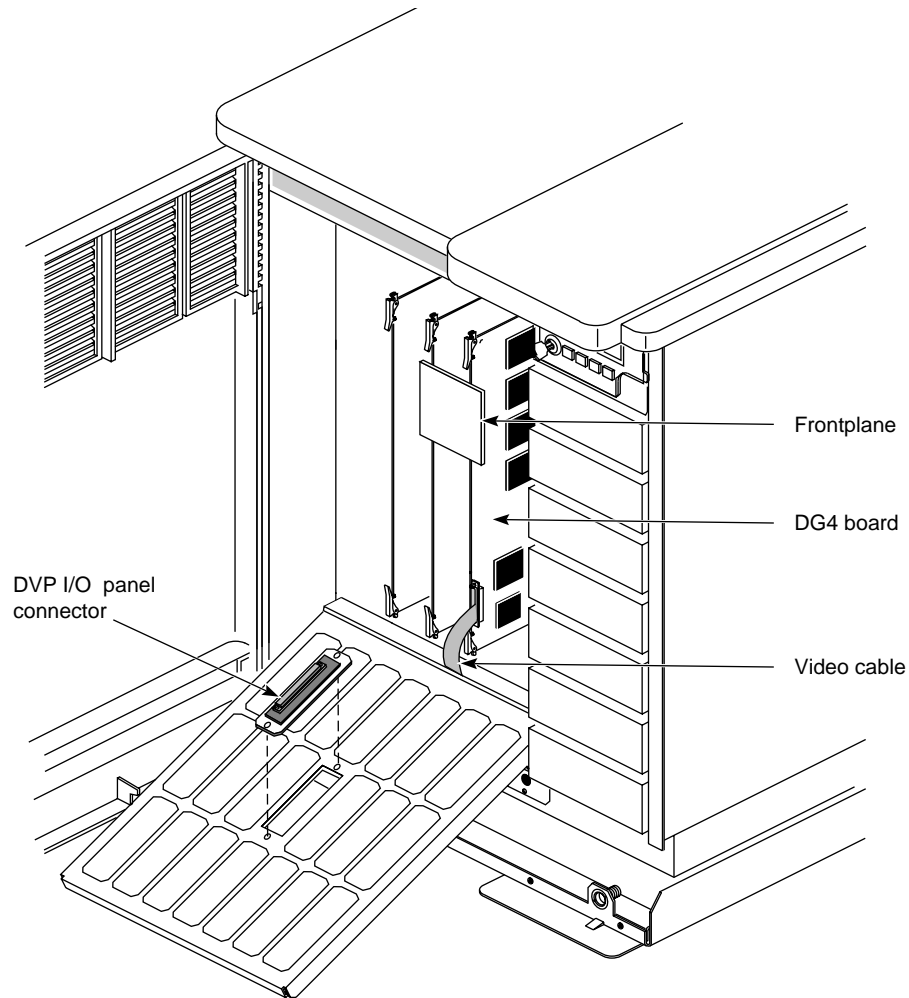


Figure 2-1 Installing the DVPI/O Panel Connector

2.3.2 Removing the Existing DG4 Board

To remove the existing DG4 board, refer to Figure 2-1 and complete the following steps:

1. Prepare a nonstatic surface large enough to accommodate the existing DG4 board and the replacement DDO board set.
2. Remove the new DDO board set from its antistatic bag. (Retain the antistatic bag for the old DG4 board.)
3. Remove the frontplane from the DG4 and RM board connectors.
4. Disconnect the video cable from the lower DG4 board connector. (Leave it attached to the I/O panel.)
5. Carefully remove the DG4 board, taking care not to damage components on it or adjacent boards.
6. Place the DG4 board in the antistatic bag, package it appropriately, and send it back to SGI.

2.3.3 Removing the Cable Clip

If you are installing the DDO board set in a desktide Onyx chassis, you must remove a small plastic clip that holds a set of internal twisted wires away from the system fan. This clip interferes with the DDO daughter board.

To remove the cable clip, see Figure 2-2 and complete the following steps:

1. Prepare a small piece of tape that can adhere to metal (electrician's tape or duct tape) to fasten the cable to the bulkhead, away from the fan.
2. Pop off the outer panel on the right side of the chassis (as you face the open back of the chassis).
3. Remove the flat metal plate located in the center of the side panel by unscrewing the four mounting screws.

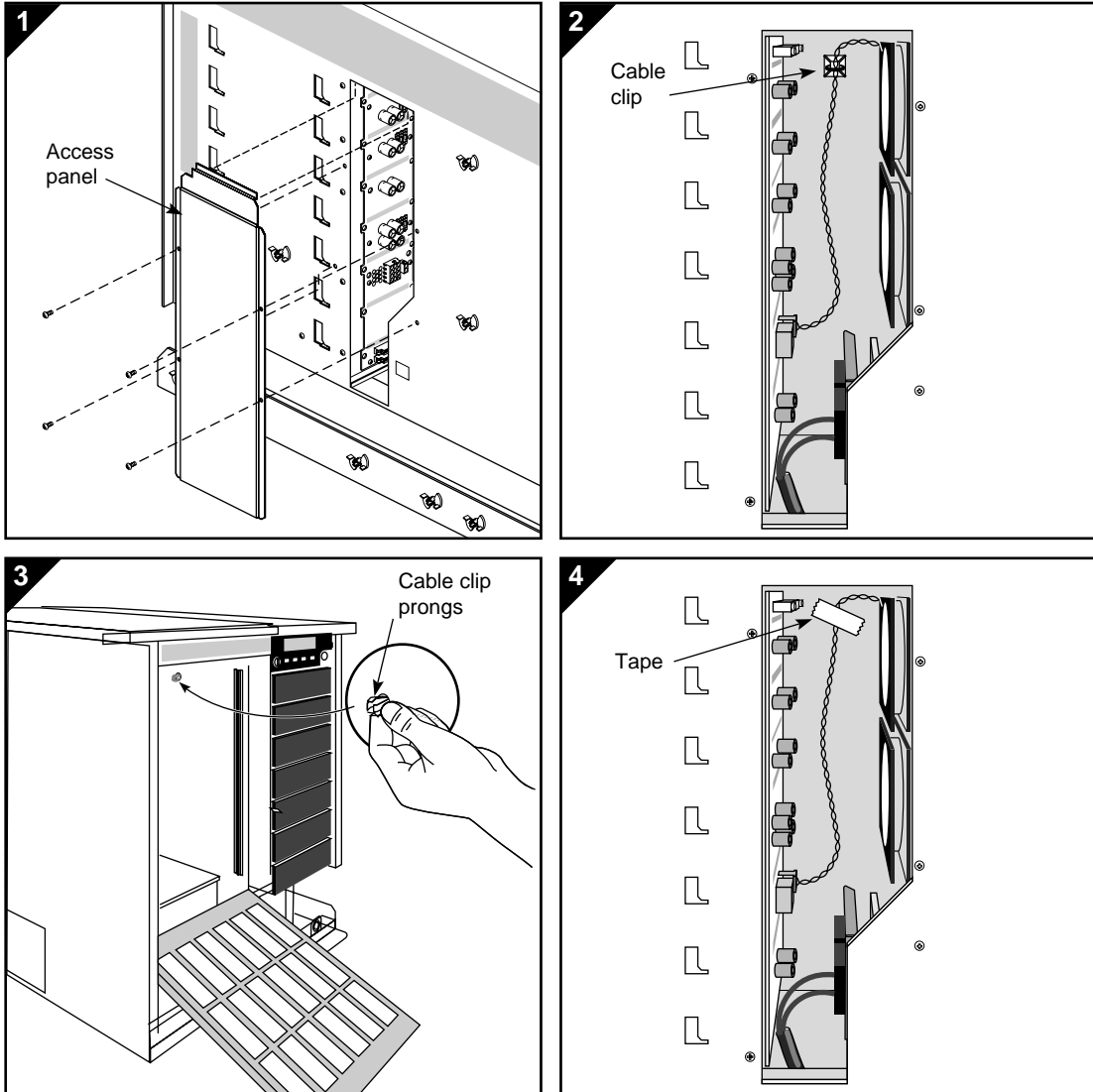


Figure 2-2 Removing the Cable Clip

4. Locate the small plastic clip that holds the twisted cable away from the fan.
5. Using your left hand to squeeze the clip from inside the chassis (where the DG4 board is located), remove the clip with your right hand.
6. Secure the twisted cable to the bulkhead with the tape.
7. Replace the metal plate to the side panel with the mounting screws.
8. Replace the outer panel to the right side of the system chassis.

2.3.4 Installing the DDO Board Set in the Chassis

To install the new DDO board set in the system chassis, see Figure 2-3 and complete the following steps:

1. Carefully position the new DDO board set into the chassis.
2. Connect one end of the DVP internal cable to the DVP board cable connector.
3. Insert the DDO board set completely into the chassis, until it seats firmly into the backplane connectors.

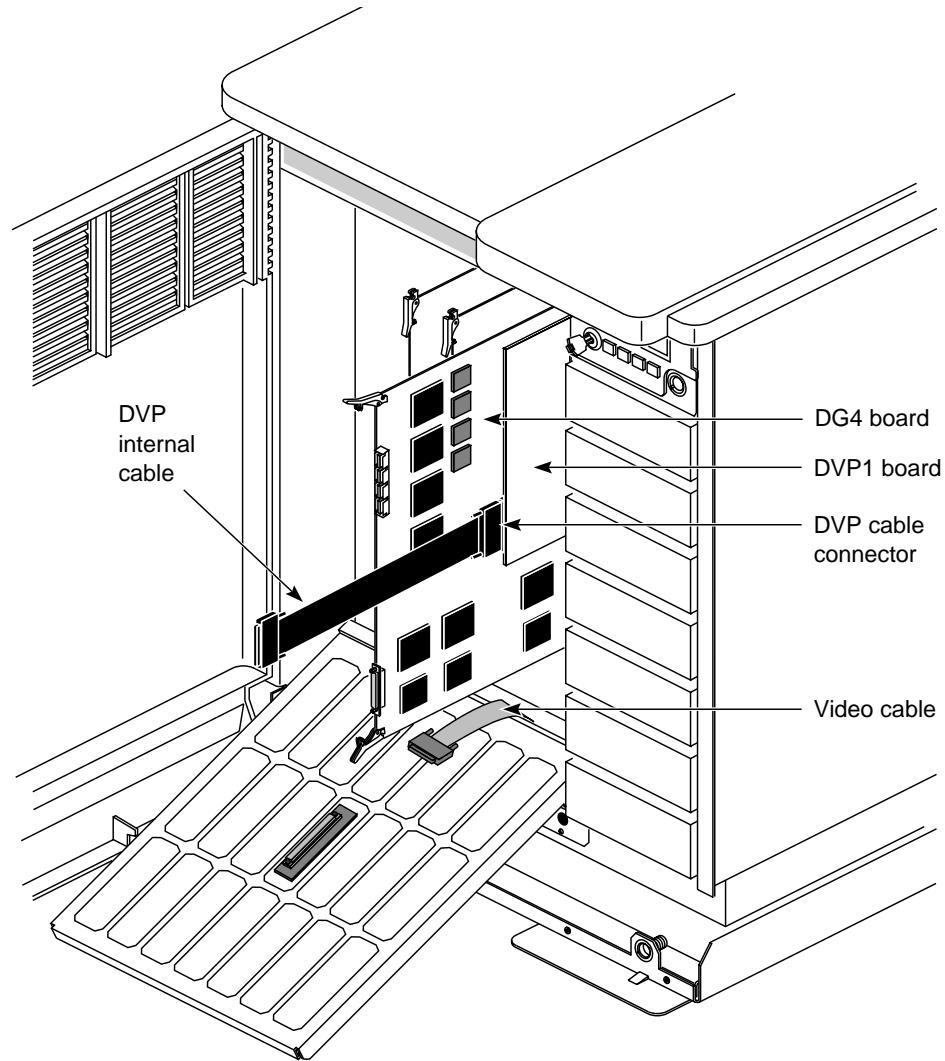


Figure 2-3 Installing the DDO Board Set

2.3.5 Connecting the DDO Board Set Internal Cables

To connect the DDO board set internal cables, see Figure 2-4 and complete the following steps:

1. Reattach the frontplane onto the DG4 board and RM board connectors.
2. Connect the video cable to the DG4 board video cable connector.
3. Attach the DVP internal cable to the DVP I/O panel connector on the I/O panel door.

Caution: Be careful not to crimp the cable or bend it any more than necessary.

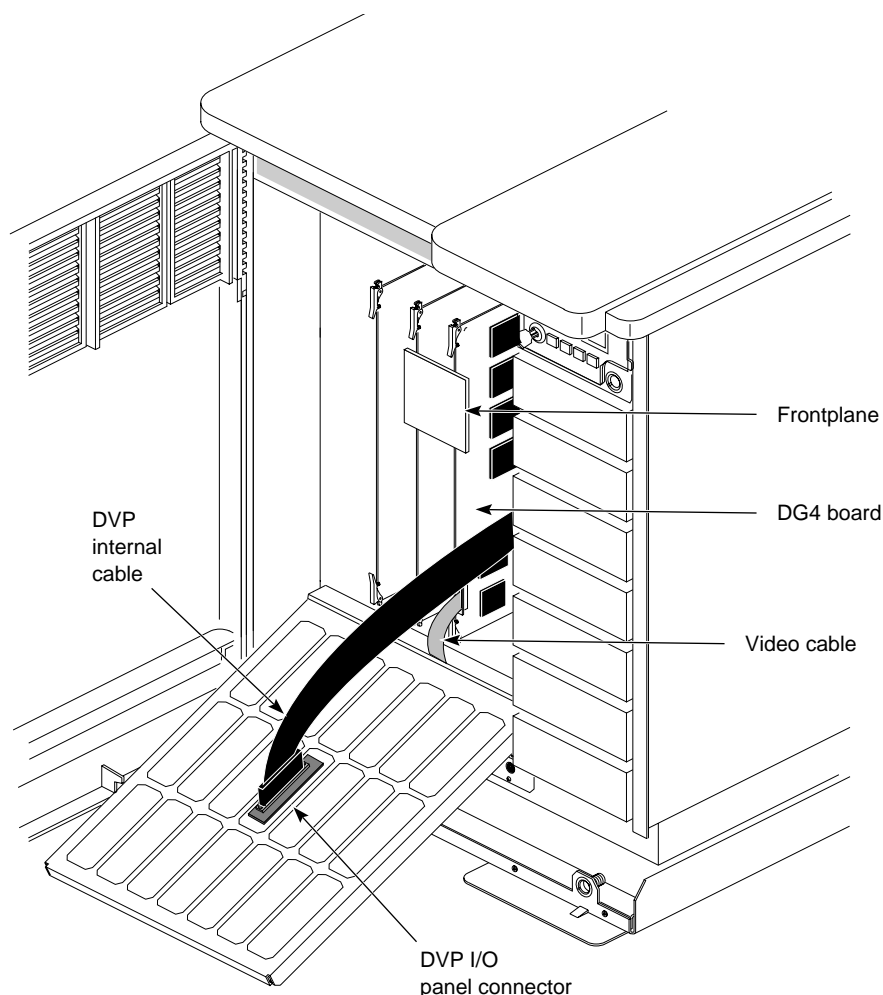


Figure 2-4 Connecting the DDO Internal Cables

4. When you are finished, carefully close the I/O door.

Caution: Exercise extreme care when closing the I/O panel door so that the cables are not damaged. This process may require repositioning or folding cables, or reinstalling the DVP I/O panel connector in a different location.

5. Attach the external CrayLink cable to the DVP I/O panel connector, as shown in Figure 2-5.

Note: With the exception of this application, Onyx systems do not use Craylink cables.

6. Attach the other end of the CrayLink cable to your specialized digital imagery equipment. (See the InfiniteReality Digital Video Port (DVP) specification for more information.)
7. When finished, install the DDO software patch and test the system (see Section 2.5).

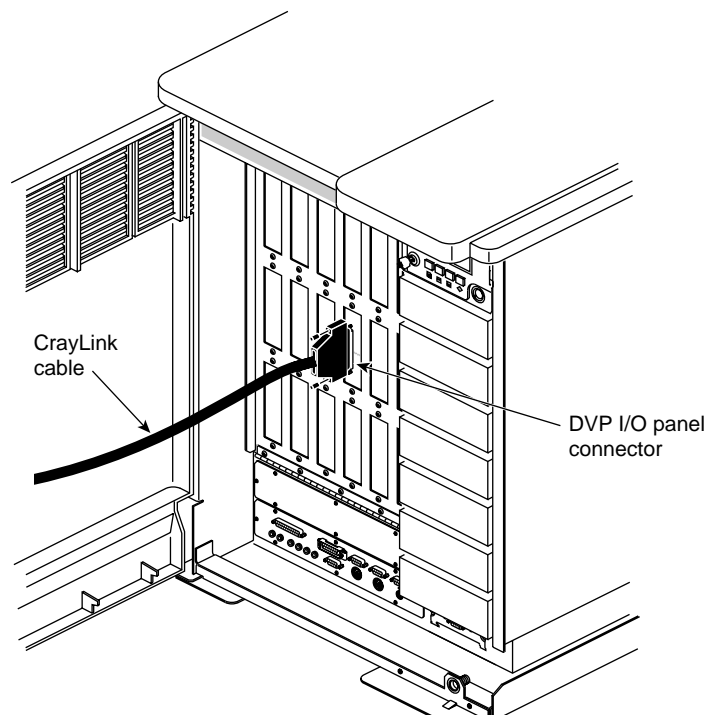


Figure 2-5 Connecting the CrayLink Cable

2.4 Installing the Digital Display Option in Onyx Rackmount Systems

2.4.1 Installing the DVP I/O Panel Connector

To install the DVP I/O panel connector in the I/O door, complete the following steps:

1. With the customer's help, make sure all users are off the system. Shut down and power off the system.
2. Open the rear chassis door.
3. Open the rear metal I/O panel to expose the chassis slots.
4. Remove a slot panel cover, preferably from the middle row. (Be sure to select a slot panel cover conveniently located near the DG4 board, which will provide adequate distance for the DVP internal cable connection.)
5. Attach the DVP I/O panel connector to the uncovered slot with mounting screws.

2.4.2 Removing the Existing DG4 Board

To remove the existing DG4 board, complete the following steps:

1. Prepare a nonstatic surface large enough to accommodate the existing DG4 board and the replacement DDO board set.
2. Remove the new DDO board set from its antistatic bag. (Retain the antistatic bag for the old DG4 board.)
3. Remove the frontplane from the DG4 and RM board connectors.
4. Disconnect the video cable from the lower DG4 board connector. (Leave it attached to the I/O panel.)
5. Carefully remove the DG4 board, taking care not to damage components on it or adjacent boards.
6. Place the DG4 board in the antistatic bag, package it appropriately, and send it back to SGI.

2.4.3 Installing the DDO Board Set in the Chassis

To install the new DDO board set in the system chassis, complete the following steps:

1. Carefully position the new DDO board set into the chassis.
2. Connect one end of the DVP internal cable to the DVP board cable connector.
3. Insert the DDO board set completely into the chassis, until it seats firmly into the backplane connectors.

2.4.4 Connecting the DDO Board Set Internal Cables

To connect the DDO board set internal cables, complete the following steps:

1. Reattach the frontplane onto the DG4 board and RM board connectors.
2. Connect the video cable to the DG4 board video cable connector.
3. Attach the DVP internal cable to the DVP I/O panel connector on the I/O panel door.
Caution: Be careful not to crimp the cable or bend it any more than necessary.
4. When you are finished, carefully close the I/O door.
Caution: Exercise extreme care when closing the I/O panel door so that the cables are not damaged. This process may require repositioning or folding cables, or possibly reinstalling the DVP I/O panel connector in a different location.
5. Attach the external CrayLink cable to the DVP I/O panel connector.
Note: With the exception of this application, Onyx systems do not use Craylink cables.

6. Attach the other end of the CrayLink cable to your specialized digital imagery equipment. (See the InfiniteReality Digital Video Port (DVP) specification for more information.)
7. When finished, install the DDO software patch and test the system (see Section 2.5).

2.5 Restarting the System and Installing the DDO Software Patch

After the DDO hardware is installed, load the patch 1808 from an SGI CD-ROM. (If you do not have the CD-ROM, contact SGI.) The system must be restarted so that it can be reconfigured for the new hardware.

DDO software images are created in Inst format and require the Inst program. Installation software and instructions are included with the standard Silicon Graphics software products.

