

IRISconsole™ Administrator's Guide

Document Number 007-2872-001

CONTRIBUTORS

Written by Carolyn Curtis

Illustrated by Dan Young, Dany Galgani, and Carolyn Curtis

Production by Chris Everett

Engineering contributions by Supriya Wickrematillake, Geoff Peck, Ravi Chhabria,
and Mark Schwenden

Cover design and illustration by Rob Aguilar, Rikk Carey, Dean Hodgkinson,
Erik Lindholm, and Kay Maitz

© 1995, Silicon Graphics, Inc.— All Rights Reserved

This document contains proprietary and confidential information of Silicon Graphics, Inc. The contents of this document may not be disclosed to third parties, copied, or duplicated in any form, in whole or in part, without the prior written permission of Silicon Graphics, Inc.

RESTRICTED RIGHTS LEGEND

Use, duplication, or disclosure of the technical data contained in this document by the Government is subject to restrictions as set forth in subdivision (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARS 52.227-7013 and/or in similar or successor clauses in the FAR, or in the DOD or NASA FAR Supplement. Unpublished rights reserved under the Copyright Laws of the United States. Contractor/manufacturer is Silicon Graphics, Inc., 2011 N. Shoreline Blvd., Mountain View, CA 94039-7311.

Silicon Graphics and IRIS are registered trademarks and IRIX, IRISconsole, CHALLENGE, and CHALLENGE RAID are trademarks of Silicon Graphics, Inc. ST-1600 is a trademark of Central Data, Inc. PostScript is a registered trademark of Adobe systems, Inc.

Contents

About This Guide ix

Audience ix

Structure of This Document ix

Conventions x

- 1. IRISconsole Features and Capabilities** 1
 - Using IRISconsole With the ST-1600 and the Indy Workstation 1
 - The IRISconsole Graphical User Interface 3
 - IRISconsole Security 4
 - Determining Whether IRISconsole Security is Off or On 5
 - Adding an IRISconsole Administrator 5
 - Adding an IRISconsole User 5
 - Changing the Administrator's Or User's Password 6
 - Deleting an Administrator or User 7
 - Setting IRISconsole Security Off or On 8
 - Viewing a List of IRISconsole Users 8
 - IRISconsole Operation 8

- 2. Configuring Sites** 11
 - Adding a Site 12
 - Checking the ST-1600 SCSI ID Number and Serial Ports 14
 - Adding a System to a Site 16

- 3. Administering Sites 19**
 - Performing Operations on Attached Systems 20
 - Connecting to a Remote IRISconsole Workstation 21
 - Monitoring Attached Systems 24
 - Using the Availability Monitor Report 24
 - Displaying the Hardware Inventory of a System 25
 - Displaying the System Log 25
 - Displaying Hardware Status Information 26
 - Using Alarms 31
 - Setting a Threshold for an Alarm 31
 - Clearing an Alarm 32
 - Viewing an Alarm Graph File 33
 - Using a Notify Script 33
 - Saving Graph Data to a File 34
 - Displaying a Graph File 35
 - Printing a Graph 35

- A. Error Messages and Warning Messages 37**

- Index 45**

Figures

Figure 1-1	IRISconsole Site Example	2
Figure 1-2	Adding an IRISconsole Administrator	5
Figure 1-3	Using the IRISconsole Security Window	6
Figure 1-4	Adding an IRISconsole User	6
Figure 1-5	Changing an IRISconsole Password	7
Figure 1-6	IRISconsole Graphical User Interface Main Window	9
Figure 2-1	IRISconsole Main Window With One Site Configuration	11
Figure 2-2	Change IRISconsole Config Dialog Box	12
Figure 2-3	Checking the ST-1600 SCSI ID Number	14
Figure 2-4	CHALLENGE Server Multiplexer Port Connections Form	15
Figure 2-5	Site Window	16
Figure 2-6	Change Site Config Dialog Box	17
Figure 3-1	Example IRISconsole Site Window	19
Figure 3-2	Example Availability Monitor Report	25
Figure 3-3	Example IRISconsole Hardware Status Monitor	26
Figure 3-4	View Pulldown Menu	27
Figure 3-5	Global Controls Dialog Box	28
Figure 3-6	Graph Style Dialog Box	29
Figure 3-7	Graph Control Panel for Blower Speed	30
Figure 3-8	Graph Control Panel for Temperature	32
Figure 3-9	Saving a Graph File	34

Tables

Table 2-1 CHALLENGE Server Multiplexer Port Connections Form:
Example 15

About This Guide

This guide documents the IRISconsole™ software graphical user interface for a Silicon Graphics® Indy™ workstation that allows it to control CHALLENGE/Onyx™ systems. The IRISconsole software is included in the IRISconsole package, which also includes an IRISconsole ST-1600™ multiplexer, and serial cables.

The Indy workstation communicates with the servers through the ST-1600, to which each CHALLENGE/Onyx system is connected via a pair of serial cables. Each ST-1600 has ports for eight or more CHALLENGE/Onyx systems; additional sets of serial cables are available from Silicon Graphics. Optionally, an additional ST-1600 can be connected to the Indy to monitor additional servers.

Audience

This guide is written for system administrators and service personnel who are responsible for the configurations of two or more CHALLENGE/Onyx system that the IRISconsole controls and monitors. These persons can use the IRISconsole software to monitor the attached systems.

Structure of This Document

This guide contains the following chapters and appendixes:

- Chapter 1, “IRISconsole Features and Capabilities,” introduces IRISconsole features and describes how IRISconsole works with the CHALLENGE/Onyx systems. This chapter explains how to use the IRISconsole security feature.

- Chapter 2, “Configuring Sites,” explains how to use the IRISconsole graphical user interface to set up groups of systems for administration purposes.
- Chapter 3, “Administering Sites,” explains how to use the IRISconsole graphical user interface for administration tasks such as determining hardware status (voltage, operating temperature, and blower speeds), and controlling, shutting down, or restarting systems in a site.
- Appendix A, “Error Messages and Warning Messages,” lists and explains IRISconsole error and warning messages.

An index completes this guide.

Conventions

These type conventions and symbols are used in this guide:

<i>Italics</i>	Executable names, filenames, IRIX commands, manual or book titles, new terms, program variables, tools, utilities, variable command line arguments, variable coordinates, and variables to be supplied by the user in examples, code, and syntax statements
Fixed-width type	Error messages, prompts, and onscreen text
Bold fixed-width type	User input, including keyboard keys (printing and nonprinting); literals supplied by the user in examples, code, and syntax statements (<i>see also</i> <>)
“”	(Double quotation marks) Onscreen menu items and references in text to document section titles
[]	(Brackets) Surrounding optional syntax statement arguments
<>	(Angle brackets) Surrounding nonprinting keyboard keys, for example, <Esc>, <Ctrl-D>

IRISconsole Features and Capabilities

This chapter introduces the operational features, functions, and capabilities of the IRISconsole software. It explains

- using IRISconsole with the ST-1600 and the Indy workstation
- the IRISconsole graphical user interface
- IRISconsole security
- IRISconsole operation

Using IRISconsole With the ST-1600 and the Indy Workstation

The IRISconsole software allows an Indy workstation to control CHALLENGE/Onyx systems through one or two Silicon Graphics ST-1600 multiplexers. Serial cables supplied with the option connect the Remote System Control port and the System Console port on each server to the ST-1600.

IRISconsole includes a security feature that lets you specify administrators and users who will have access to functionalities of IRISconsole. Also, certain features of IRISconsole can be accessed remotely using *ictelnet*, a version of *telnet* that works with IRISconsole.

IRISconsole is a local system; the IRISconsole software applies only to systems that are physically attached to the ST-1600 connected to the Indy workstation on which the IRISconsole software is running. The IRISconsole software cannot communicate with another system running IRISconsole to share access to attached systems.

Cabling the ST-1600 and CHALLENGE/Onyx systems is explained in the *IRISconsole ST-1600 Installation Guide* (007-2839-001). Figure 1-1 shows an example IRISconsole site installation.

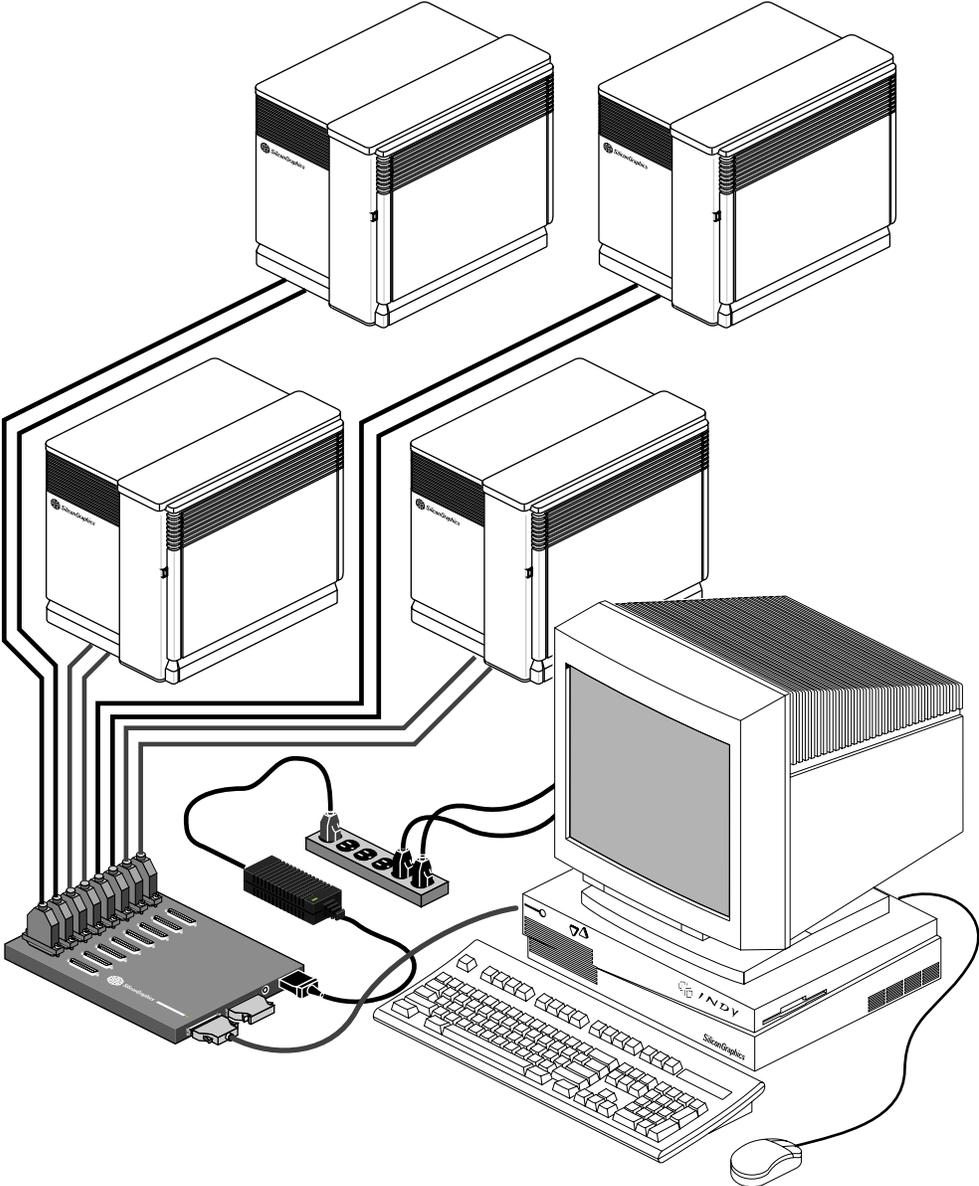


Figure 1-1 IRISconsole Site Example

Hardware requirements for the IRISconsole software are as follows:

- The 24-bit Indy workstation must have a minimum of 32 MB of memory and must be running IRIX 5.3. The 20-inch display is strongly recommended for IRISconsole operation, as are XFS filesystems, for their decreased recovery time and typically better performance.
- If one of the attached servers is a CHALLENGE S, or if an attached CHALLENGE/Onyx system does not have a Remote System Control port, not all features of the IRISconsole software are available. An upgrade consisting of an RS-232 plate assembly is available to equip CHALLENGE L servers that lack this port; contact your service representative.
- Only the cables supplied with IRISconsole, and additional cables for IRISconsole available from Silicon Graphics, are supported for connecting the CHALLENGE/Onyx systems to the ST-1600. The *IRISconsole ST-1600 Installation Guide* describes these cables.

The IRISconsole Graphical User Interface

The IRISconsole graphical user interface (GUI) enables you to set up and administer *sites*. A site is a group of workstations, servers, or other systems that are administered through IRISconsole. You can use the IRISconsole GUI to

- set up a site or add or delete the systems in a site
- display, view, or take control of the console of a system
- generate a nonmaskable interrupt (NMI), or hardware-reset, or power-cycle a system
- view real-time graphs of hardware operating statistics of a system in a site, such as voltage, operating temperature, and blower speeds; save the graphs as files and display them
- set a threshold for operating statistics so that an alarm is activated and various activities are triggered when the threshold is exceeded
- view activity logs and other system reports

Chapter 2, “Configuring Sites,” and Chapter 3, “Administering Sites,” in this guide explain how to set up sites and administer sites, respectively.

IRISconsole Security

IRISconsole includes security features that use local password protection to assist administrators in securing IRISconsole and its managed systems from unauthorized access. When IRISconsole security is turned on, access to certain operations is controlled. These operations are as follows; some of these operations are represented by buttons in the site window:

- adding or deleting sites and systems in the sites (Edit pulldown menu)
- getting the console (*Get Console*), viewing the console window of a system controlled by another user (*Spy Console*), and taking control of a system console that another user is currently using (*Steal Console*)
- generating a non-maskable interrupt (*Generate NMI*)
- hardware reset (*HW Reset*) and power cycle (*Power Cycle*)
- viewing console activity logs (*Show Console Logs*)

Note: For access to these operations to be controlled, IRISconsole security must be turned on. Security is on by default.

The IRISconsole software includes functions for setting up and maintaining administrator and user logins, each with a password. These logins and passwords are specific to IRISconsole and are independent of system logins and passwords. You can

- determine whether IRISconsole security is off or on
- add an IRISconsole administrator
- add an IRISconsole user
- change the administrator's or user's password
- delete an administrator or user
- set IRISconsole security off or on
- view a list of IRISconsole users

Determining Whether IRISconsole Security is Off or On

To determine whether IRISconsole security is on, type

```
icpass -security get
```

The software returns `off` or `on`.

Adding an IRISconsole Administrator

To add an IRISconsole administrator, type as root

```
icpass -add icadmin
```

The window shown in Figure 1-2 appears.



Figure 1-2 Adding an IRISconsole Administrator

Enter the new user's login and password. Note that they are independent of that user's system login and password. Click the *Apply* button.

Adding an IRISconsole User

To add an IRISconsole user, you must be an IRISconsole administrator. Type

```
icpass -add icuser
```

The window shown in Figure 1-4 appears.



Figure 1-3 Using the IRISconsole Security Window

After you enter your IRISconsole login and password and click the *Apply* button, the window shown in Figure 1-4 appears.



Figure 1-4 Adding an IRISconsole User

Enter the new user's login and password. Note that they are independent of that user's system login and password. Click the *Apply* button.

Changing the Administrator's Or User's Password

To change an IRISconsole administrator's or user's password, type

```
icpass -change icuser
```

or

```
icpass -change icadmin
```

The window shown in Figure 1-5 appears.



Figure 1-5 Changing an IRISconsole Password

Enter the login for the user whose password you want to change. Enter the user's old password and new password, and click the *Apply* button.

Deleting an Administrator or User

To delete an IRISconsole administrator or user, you must be an IRISconsole administrator. Type

```
icpass -delete icadmin <icadminlogin>
```

or

```
icpass -delete icuser <icuserlogin>
```

The security window shown in Figure 1-4 appears. After you enter correct information, a confirmation window appears with the message

```
Entry deleted from password database
```

Setting IRISconsole Security Off or On

To set IRISconsole security on or off, you must be an IRISconsole administrator. To set IRISconsole security on, type

```
icpass -security set on
```

To set IRISconsole security off, type

```
icpass -security set off
```

In either case, the security window shown in Figure 1-4 appears. After you enter correct information, a confirmation window appears with the message

```
Access Control status changed to 'ON'
```

or

```
Access Control status changed to 'OFF'
```

Viewing a List of IRISconsole Users

To view a list of IRISconsole administrators, type

```
icpass -list icadmin
```

To view a list of IRISconsole users, type

```
icpass -list icuser
```

In each case, IRISconsole prints the path of the password file.

IRISconsole Operation

To use the IRISconsole, follow these steps:

1. Make sure the Indy workstation, ST-1600 multiplexer, and CHALLENGE/Onyx systems to be administered are cabled as described in the *IRISconsole ST-1600 Installation Guide*.
2. Make sure all systems are powered on.

3. The IRISconsole security feature is on by default; to check it or toggle it on or off, follow instructions in “IRISconsole Security,” earlier in this chapter.
4. Start the IRISconsole graphical user interface: in an IRIX window, type
`/usr/sbin/ic`

The IRISconsole GUI main window appears, as shown in Figure 1-6.

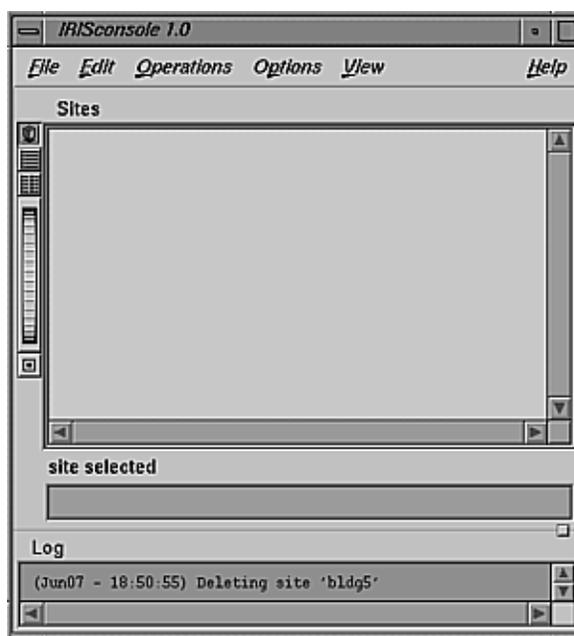


Figure 1-6 IRISconsole Graphical User Interface Main Window

To exit the IRISconsole GUI, select “Quit” in the File menu or press `<Ctrl-Q>`.

Chapter 2, “Configuring Sites,” gives instructions for setting up sites; Chapter 3, “Administering Sites,” has complete information on using IRISconsole for administering sites.

Configuring Sites

This chapter explains how to use the IRISconsole graphical user interface (GUI) to set up a site, configure a site, edit a site configuration, add a system to a site, or delete a site configuration. Facilities for accomplishing these tasks are accessed through the IRISconsole GUI main window. Figure 2-1 shows an IRISconsole main window with one site configured.



Figure 2-1 IRISconsole Main Window With One Site Configuration

Note: IRISconsole is a local system; the IRISconsole software applies only to systems that are physically attached to the ST-1600 connected to the Indy workstation on which the IRISconsole software is running. The IRISconsole

software cannot communicate with another system running IRISconsole to share access to attached systems.

Setting up a site entails

- using IRISconsole to add a site
- checking the ST-1600 SCSI ID number and serial ports
- adding systems to a site

Adding a Site

To set up an IRISconsole site, follow these steps:

1. In the Edit menu, select “Add New Site...” The Change IRISconsole Config dialog box appears, as shown in Figure 2-2.

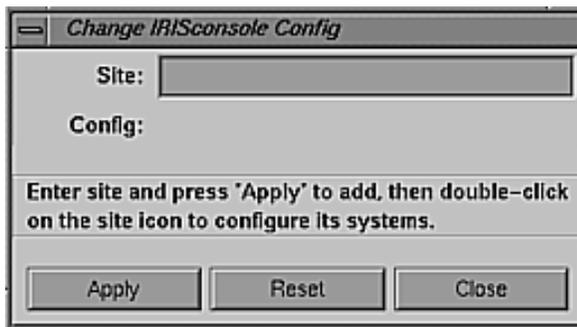


Figure 2-2 Change IRISconsole Config Dialog Box

2. In the Site: field, type a name for the site.
3. Click the *Apply* button.

The name of the configuration file appears in the Config: field; its name is based on the system name; for example, `/var/IRISconsole/.icrc.netwk1` is the configuration file for the site `netwk1`. The format of this filename—`.icrc.sitename`— cannot be changed.

4. To save the new site configuration, select “Save IRISconsole Config” (or “Save IRISconsole Config As...”) in the File menu in the main IRISconsole window.
5. To add another site, edit the entry in the Site: field or click the *Reset* button to clear the field. After you click the *Apply* button, the name of the new configuration file appears automatically in the Config: field. Save the new site configuration as in step 4.
6. When you are finished adding systems to the site, close the site window by clicking the *Close* button.
7. To save the file, select “Save IRISconsole Config” (or “Save IRISconsole Config As”) in the File menu. The file is saved to the IRISconsole directory `/var/IRISconsole/`.
8. Click the *Close* button to exit the Change IRISconsole Config dialog box.

Note: You can rename or delete a site using choices in the IRISconsole main window Edit menu.

Checking the ST-1600 SCSI ID Number and Serial Ports

For installing systems for IRISconsole, you will need the number of the SCSI ID used by the ST-1600. This number was set when the IRISconsole system was installed and is displayed on the back of the ST-1600, as shown in Figure 2-3. Note the number here:

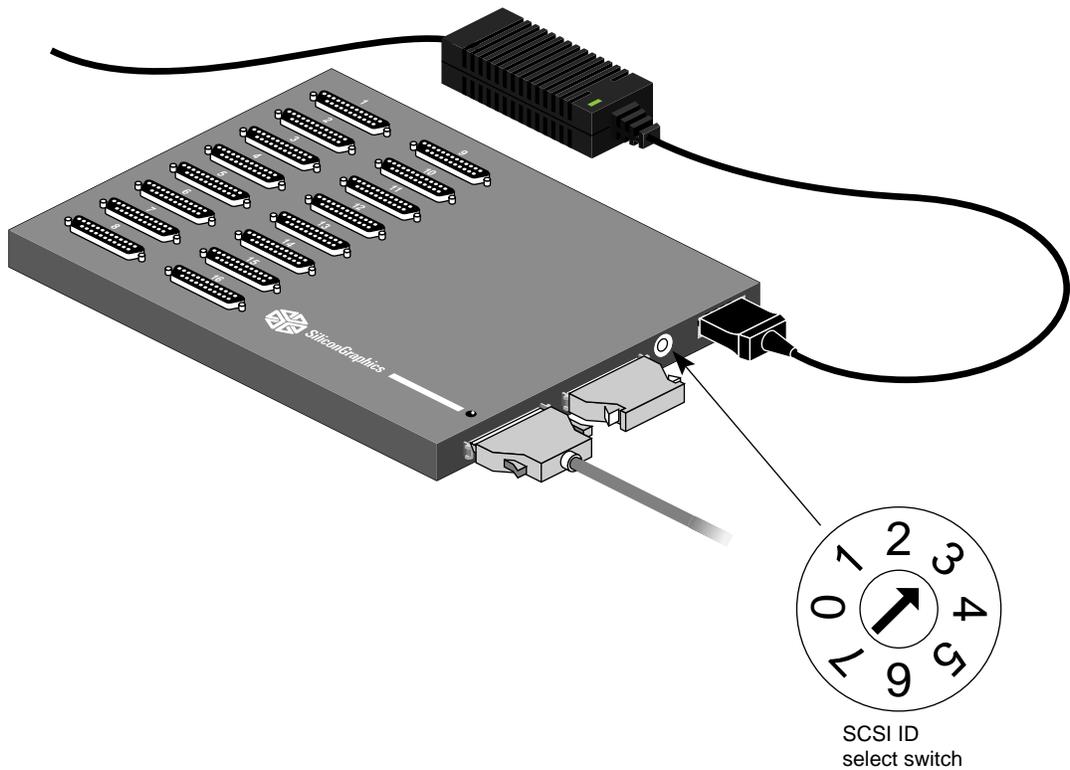


Figure 2-3 Checking the ST-1600 SCSI ID Number

Check the cabling for each system connected to the ST-1600 multiplexer to determine the multiplexer port to which each system's Remote System Control and System Console ports are connected.

If you want, fill in Figure 2-4 as an aid in determining which serial ports are used for which servers. Table 2-1 shows examples.

CHALLENGE Server Hostname	Multiplexer Port Connection	
	Remote System Control	System Console

Figure 2-4 CHALLENGE Server Multiplexer Port Connections Form

Table 2-1 CHALLENGE Server Multiplexer Port Connections Form: Example

CHALLENGE Server Hostname	Multiplexer Port Number	
	Remote System Control	System Console
jupiter	01	02
zeus	03	04

Adding a System to a Site

To add a system to a site, follow these steps:

1. In the IRISconsole main window, double-click on the site to which you want to add a system or select the system and select “Open Site...” in the Operations menu. The site window opens, as shown in Figure 2-5.

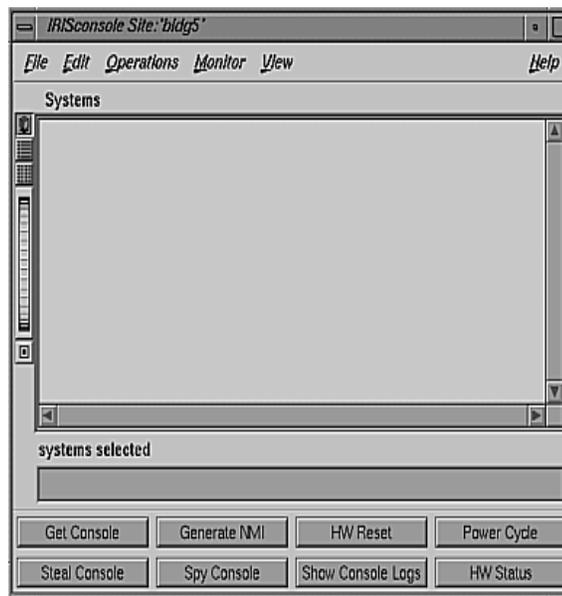


Figure 2-5 Site Window

2. In the site window, select “Add New System...” in the Edit menu. If IRISconsole security is on, you are prompted for your password.

After you enter your password, the Change Site Config dialog box appears, as shown in Figure 2-6.

The dialog box titled "Change Site Config: 'bldg5'" contains the following fields and controls:

- System Name: [Text Input Field]
- ST-1600 SCSI ID# (2-7): [Text Input Field]
- Console Port# (1-16): [Text Input Field]
- Remote System Control Port# (1-16): [Text Input Field]
- Login: [Text Input Field]
- Baud Rate: [Text Input Field]
- Log Console Activity to File:

Below the fields, there is a note: "If a port is not attached, enter '-1'. Console must be open for its output to get logged." At the bottom, there are three buttons: "Apply", "Reset", and "Close".

Figure 2-6 Change Site Config Dialog Box

3. In the System Name: field, type the host name of the system you want to add to this site.
4. In the ST-1600 SCSI ID#: field, enter the SCSI ID number of the ST-1600, as determined in the previous section, "Checking the ST-1600 SCSI ID Number and Serial Ports."
5. Based on your observance of the ST-1600 cabling or using the entries in Table 2-1, enter the ST-1600 port numbers to which cables to the Console port and Remote System Control port are connected in the Console Port# and Remote System Control Port# fields, respectively.
6. In the Login: field, enter the login under which all operations requiring access to the system via the network can be performed. This login is the one used in the command

```
rsh <login>@<system> /usr/etc/sysctlrld -p
```

Note: The IRISconsole security login is separate from this system login; IRISconsole security is explained in "IRISconsole Security" in Chapter 1.

7. In the Baud Rate: field, enter the baud rate at which this system sends data to IRISconsole; the default for CHALLENGE systems is 9600. If you enter a different baud rate, be sure that the CHALLENGE system has been configured for that rate.
8. Click the box at the Log Console Activity to File: if you want console activity logged to a file in the `/var/IRISconsole/logs/console_logs/` directory that has the format `systemname.<timestamp>.log`. The format of this filename cannot be changed.
Note: To view a log of a system's console activity ("Spy Console" button or command) or to view console activity logs ("View Console Logs" button or command), this box must be checked when the system is added to a site.
9. When you are satisfied with the settings for this system, click the *Apply* button to add this system to the site.
10. To save the configuration, select "Save Site Config" (or "Save Site Config As...") in the site window File menu.
11. To add another system to the site, edit the entries in the fields of the Change Site Config dialog box, or click the *Reset* button to clear all entries and begin entering again. Follow instructions in steps 3 through 10 for the new system.
12. When you are finished adding systems to the site, close the Change Site Config dialog box by clicking the *Close* button.

If your hardware configuration changes, use "Modify System Config..." in the site window Edit menu to change the parameters for a system in a site. To delete a system from a site, select it in the site window and choose "Delete Selected" in the Edit menu.

Administering Sites

This chapter explains how to use the IRISconsole graphical user interface (GUI) to administer servers and other devices in sites that it controls.

To see characteristics for a site, double-click on its name in the scrolling list of sites in the IRISconsole main window. Alternatively, you can select a site and then select “Open Site...” in the IRISconsole main window Operations menu. Figure 3-1 shows an example site window.

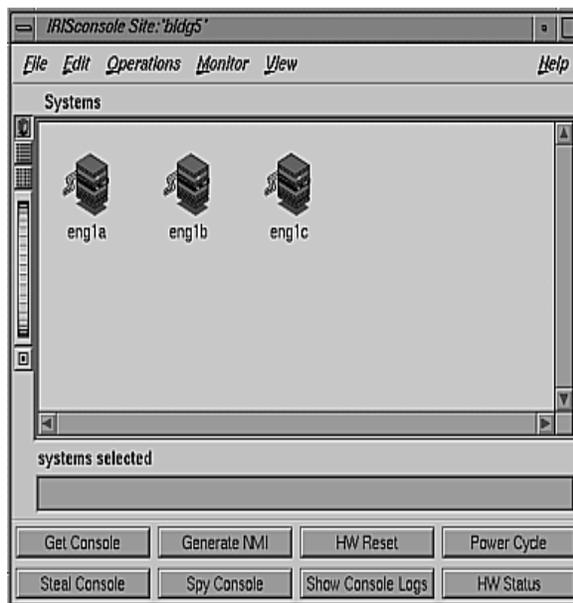


Figure 3-1 Example IRISconsole Site Window

This chapter explains

- performing operations on attached systems
- connecting to a remote system
- monitoring attached systems
- setting a threshold for and clearing an alarm
- using a notify script
- saving graph data to a file

Performing Operations on Attached Systems

You can use the buttons in the site window (see Figure 3-1) for system administration tasks. All but the last of these options display a window in which you type your IRISconsole login and password as it was entered in the IRISconsole security facility; see “IRISconsole Security” in Chapter 1.

- To access and display a system’s console window, select the system and click the *Get Console* button. The console window appears on the Indy workstation screen.
- To generate a non-maskable interrupt (forcing a panic in the operating system), click the *Generate NMI* button.
- To reset a system in a site (hardware reset), select the system and click the *HW Reset* button. A confirmation message appears.
- To power-cycle a system, or to power on a system that has been turned off, select the system and click the *Power Cycle* button.

In the case of a power cycle, the system controller removes the power enable control signals, waits five seconds, and restores power. Boot arbitration is started after power is reapplied.

- To take control of a system console that another user is currently using, select the system and click the *Steal Console* button. The console window appears on the Indy workstation screen. The original user sees the message `IRISconsole DINC closing...`; that owner’s session is killed.
- To display a window showing console activity of a system in progress, select the system and click the *Spy Console* button. In order to view this

activity, the “Log Console Activity to File” option must have been checked when the system is added to a site, as explained in step 8 in “Adding a System to a Site” in Chapter 2.

- To view console logs (stored in `/var/IRISconsole/logs/console_logs/`), select the system and click the *Show Console Logs* button. In order for these logs to be written, an IRISconsole user must be connected via the “Get Console” command and the system must have been configured with the “Log Console Activity to File” option checked, as explained in step 8 in “Adding a System to a Site” in Chapter 2.
- To display graphs of system activity, click the *HW Status* button. The Hardware Status Monitor appears; this feature is explained in detail in “Monitoring Attached Systems,” later in this chapter. This feature requires a network connection between the Indy host and the target system.

For each of these tasks, you can also select the corresponding command in the Operations pulldown menu.

Connecting to a Remote IRISconsole Workstation

You can use *ictelnet* `<Indyhostname> <portnumber>` to access the IRISconsole text-based menu from another system. *ictelnet* is a version of *telnet* adapted for IRISconsole. Follow these steps:

1. To configure a port on the Indy so that *ictelnet* communicates directly to the IRISconsole application, edit the file `/etc/services` on that system to include the following line, which specifies the port on which the service is available:

```
ictelnet 5000/tcp # IRISconsole Remote Access service
```

For the port number, use any number between 5000 and 5063; the number 5000 is recommended for the status port.

2. Edit the file `/etc/inetd.conf` to include the line

```
ictelnet stream tcp    nowait  root  /usr/IRISconsole/bin/ictelnetd  ictelnetd
```

3. To use *ictelnet*, type

```
ictelnet <Indyhostname> 5000
```

4. The software prompts for your IRISconsole login and password. Enter them as they were entered with *icpass -add icuser* or *icpass -add icadmin*; see “Adding an IRISconsole Administrator” in Chapter 1 for details.

After a few lines of response, the available IRISconsole sites configured on the Indy are listed, for example:

```
Main Menu:
Available Sites
-----
1. engla
2. englb
3. englc
```

Enter choice (1 - 3) or 'q' to Quit:

If a network connection from the remote host you are using to the IRISconsole system is not available, you have two choices:

- log in to the IRISconsole system via modem and use *ictelnet* from there
 - if you have a (modem) SLIP or PPP connection, you can run the IRISconsole GUI remotely
5. Enter the number for the site to which you want to connect. Text like the following appears:

```
Site 'engla':
Available Systems
-----
1. engla
2. englb
3. englc
```

Enter choice (1 - 3) or '..' for Main Menu:

6. Enter the number for the system to which you want to connect. The Available Operations menu appears, for example:

```
System 'engla':
Available Operations
-----
1. Connect to Console
2. Hardware Reset
3. Generate NMI
4. Power Cycle
```

5. Steal Occupied Console Line

Enter choice (1 - 5) or '..' for Systems Menu:

7. Enter the number for the operation you want to perform. The following message appears:

This operation is protected.
Please enter your IRISconsole login and password.

IRISconsole Login:

8. Enter your IRISconsole login and password at the prompt. Status and other information like the following appears:

-----Connected Port=/dev/ttyd043 -----

9600 BAUD 8 NONE 1 SWFC=ON HWFC=OFF
CAR=ON DTR=ON RTS=ON CTS=ON DSR=ON
Type ~? for Help, ~X to Exit.
Connection Ready.

9. Use the tilde commands ((+)-Baud Csize Dtr Framing Hwfc Info
breaK Modem Oflush Parity Rts Swfc eXit) to change settings; you
need not press <Enter>.

For example, ~S (note that this letter is uppercase) toggles software flow control and displays a message similar to:

9600 BAUD 8 NONE 1 SWFC=OFF HWFC=OFF
^^^^^^^^

10. To exit *ictelnet*, type ~x. This command returns you to the Available Operations menu for the system that was described in step 6 of this procedure.
11. From the Available Operations menu, type .. to exit to the Systems Menu; type .. to exit to the Main Menu; type q to exit to the IRIX prompt.

Monitoring Attached Systems

Use the IRISconsole GUI to display information about attached systems. Via the network connection, the IRISconsole gets hardware operating information and displays it in windows or in real-time graphs in a window. This section explains

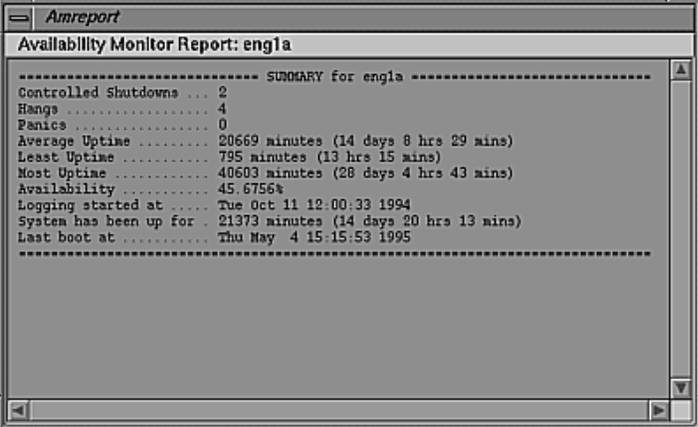
- using the Availability Monitor (Availmon) report for a system
- displaying hardware inventory
- displaying the syslog
- displaying hardware status information

Using the Availability Monitor Report

The IRISconsole Availmon report gives a snapshot of availability information on a system. It is a condensation of the information in */var/adm/avail/availlog*, displayed in a format similar to that of */var/adm/avail/amreport*.

To display the Availmon report, follow these steps:

1. Make sure that *availmon* is installed and active on the CHALLENGE/Onyx systems you wish to access (use */etc/chkconfig*).
2. In the site window, select the system for which you want a report.
3. Select “Availmon Report...” in the Monitor menu. A window like the example in Figure 3-2 appears.



```
Amreport
-----
Availability Monitor Report: eng1a
----- SUMMARY for eng1a -----
Controlled Shutdowns . . . 2
Hangs . . . . . 4
Panic . . . . . 0
Average Uptime . . . . . 20669 minutes (14 days 8 hrs 29 mins)
Least Uptime . . . . . 795 minutes (13 hrs 15 mins)
Most Uptime . . . . . 40603 minutes (28 days 4 hrs 43 mins)
Availability . . . . . 45.6756%
Logging started at . . . . Tue Oct 11 12:00:33 1994
System has been up for . . 21373 minutes (14 days 20 hrs 13 mins)
Last boot at . . . . . Thu May 4 15:15:53 1995
-----
```

Figure 3-2 Example Availability Monitor Report

Displaying the Hardware Inventory of a System

To display a hardware inventory of an attached system, select the system in the site window and click “Hardware Inventory...” in the Monitor menu. The output of *hinv* for that system appears in a window.

Displaying the System Log

To display the syslog for a system, select the system in the site window. Select “Show Syslog...” in the Monitor menu.

To update the syslog display, close the syslog window and select “Show Syslog...” again.

Displaying Hardware Status Information

To display hardware operating information on a CHALLENGE or Onyx rackmount or desktside system in a site, follow these steps:

1. In the IRISconsole main window, double-click on the site containing the system whose hardware operating information you want to check. The site window appears.
2. In the Systems scrolling list of the site window, select the system for which you want information.
3. Click the *HW Status* button. The IRISconsole Hardware Status Monitor appears, as shown in Figure 3-3.

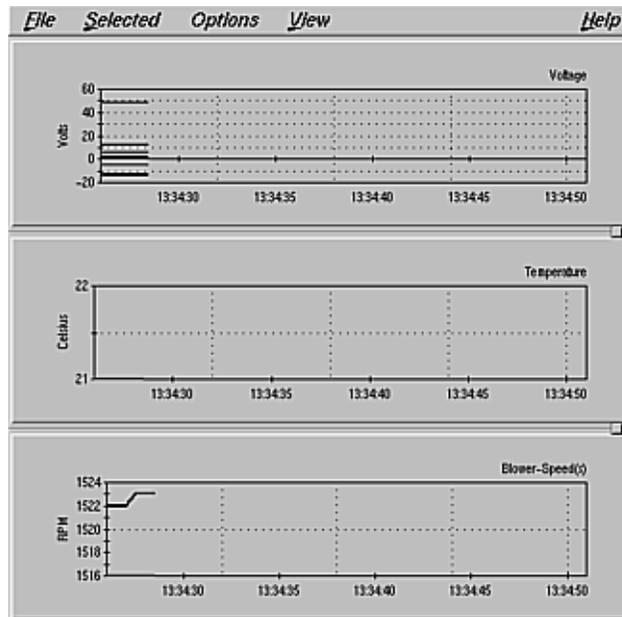


Figure 3-3 Example IRISconsole Hardware Status Monitor

This section explains

- customizing the Hardware Status Monitor display
- changing point and line styles for graphs
- using graph control panels for specific graphs

Customizing the Hardware Status Monitor Display

To change the height of a graph in the IRISconsole Hardware Status Monitor, put the mouse cursor on one of the two sashes (small square at the extreme right between the graphs) and drag it down or up; the relative heights of the graphs above and below it change.

To zoom an area of the display, select the graph you want to zoom; holding down the <ctrl> key and pressing the middle mouse button, move the mouse. Press **r** to reset the display.

You can further customize the display using choices in the Hardware Status Monitor View pulldown menu. Figure 3-4 shows the View menu.

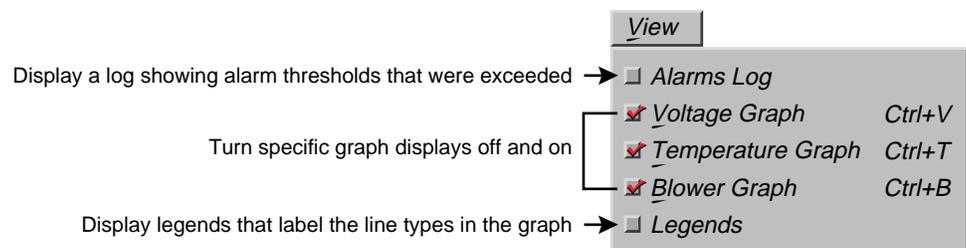


Figure 3-4 View Pulldown Menu

Finally, you can use the Global Controls dialog box to customize the graph data. Select “Global Controls...” in the Options pulldown menu; Figure 3-5 shows this dialog box.

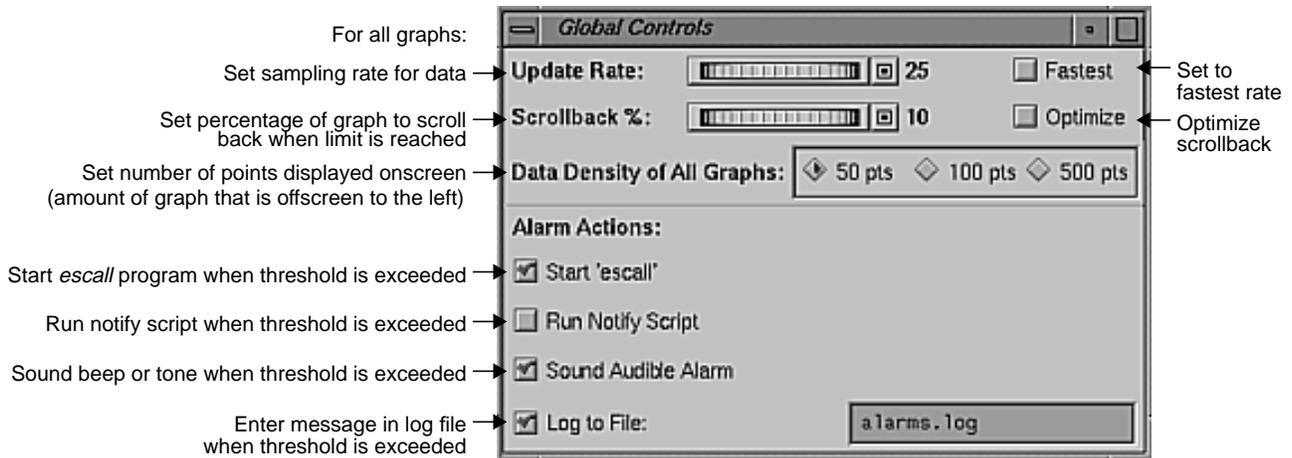


Figure 3-5 Global Controls Dialog Box

The Start 'escall' feature in Alarm Actions is available only for sites in North America that have purchased the Support Advantage Electronic Services package.

Changing Point or Line Styles for Graphs

To change the point or line style in a graph display, follow these steps:

Note: Style changes apply onscreen and for printing only; point and font style changes are not saved when the graph is saved to a file.

1. In the Selected menu, select “Styles...” or click the *Styles* button in the Graph Control dialog box. Figure 3-6 shows the Graph Style dialog box.

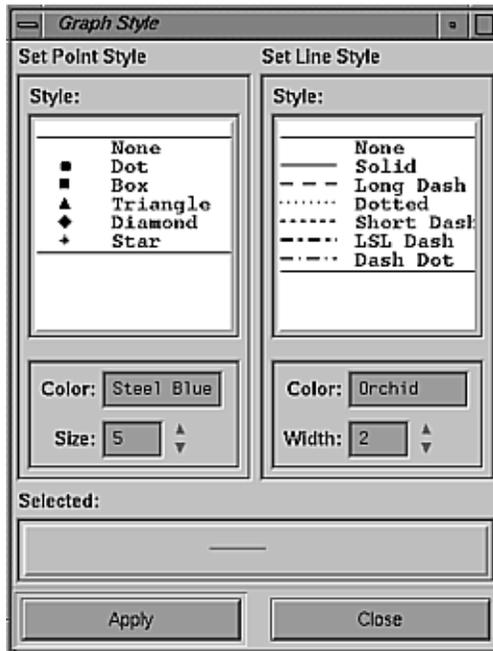


Figure 3-6 Graph Style Dialog Box

2. In the Hardware Status Monitor, click the left mouse button on the graph whose style you want to change. The graph background turns yellow.
3. Put the mouse cursor on the line whose style you want to change and click the right mouse button.

Note: To facilitate selecting a line, zoom the display by holding down the <Ctrl> key, pressing the middle mouse button, and moving the mouse. To reset the display, type `r`.

4. In the Graph Style dialog box, select the point or line style you want and click the *Apply* button to save the setting.
5. When you are satisfied with the settings, click the *Close* button to exit the Graph Style dialog box.

Using Graph Control Panels for Specific Graphs

A graph control panel is associated with each graph. To display the control panel for a graph, follow these steps:

1. In the Hardware Status Monitor, select the graph for which you want to display a control panel. The graph background turns yellow.
2. In the Selected menu, select “Graph Controls...” Figure 3-7 shows the graph control panel for blower speed(s).

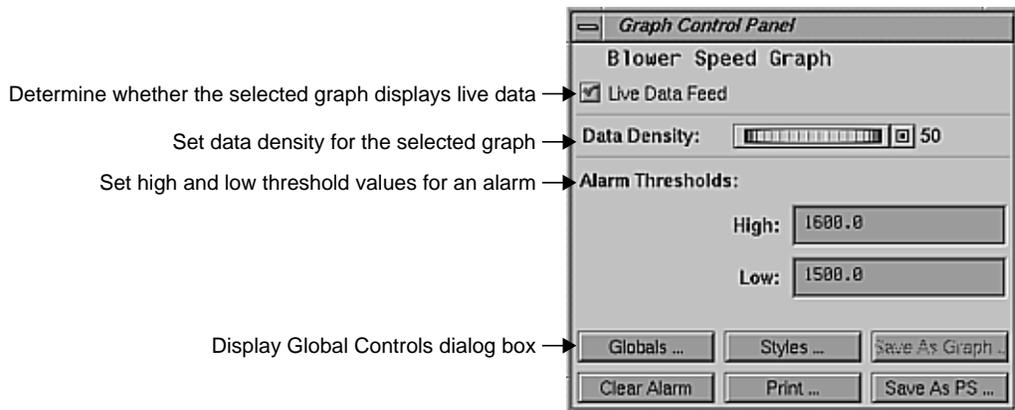


Figure 3-7 Graph Control Panel for Blower Speed

Use features of this panel to

- set an alarm threshold, as described in “Using Alarms,” later in this chapter
- set actions to be performed if the threshold is exceeded, as described in “Using Alarms,” later in this chapter
- clear an alarm
- change the point and line style of the graphs, as described in “Changing Point or Line Styles for Graphs,” earlier in this chapter
- print the graphs, as described in “Saving Graph Data to a File,” later in this chapter
- save the graphs as graphs or PostScript® files, as described in “Printing a Graph,” later in this chapter

Using Alarms

You can set a threshold value for a hardware operating parameter, such as blower speed. When the value is exceeded, the graph that maps it changes color to alert you that the threshold has been exceeded and its contents are saved to a file. You can also set IRISconsole to perform any of the following actions when the threshold is exceeded:

- start the *escall* program (Electronic Services Call Monitor), which is included in the Support Advantage Electronic Services package
- cause a beep or tone to be sounded
- enter a message in an alarms log file in `/var/IRISconsole/logs/`; the default filename is *alarms.log*
- start a notify script

For example, you can set the operating temperature threshold for a CHALLENGE XL in a site to 37, so that when the system internal temperature exceeds 37 degrees C, the alarm is triggered.

This section explains

- setting a threshold for an alarm
- clearing an alarm
- viewing an alarm graph file
- using a notify script

Setting a Threshold for an Alarm

To set a threshold, follow these steps:

1. Select the graph for which you want to set an alarm threshold. The graph background turns yellow.
2. In the Selected menu, choose “Graph Controls...” The Graph Control Panel appears; Figure 3-8 shows the panel for the Temperature graph.

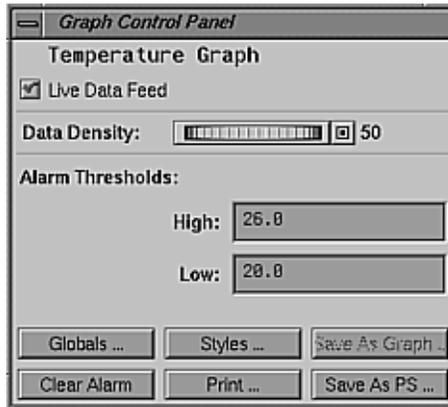


Figure 3-8 Graph Control Panel for Temperature

3. If desired, change the data density (number of points) of the data being sampled.
4. Select the high and low alarm threshold values you want from the choices in the High and Low fields.
5. If desired, select one or more alarm actions in the Global Controls window.

When the threshold value is reached or exceeded, the graph display turns hot pink when unselected (bright red when selected).

Clearing an Alarm

To clear an alarm, select the graph whose alarm you want to clear and click the *Clear Alarm* button in the Graph Control panel, or select “Clear Alarm” in the Selected menu. To clear all alarms, select “Clear All Alarms” in the Options menu.

Viewing an Alarm Graph File

When a threshold is exceeded, the graph for which the alarm is set is automatically saved to a file in the directory `/var/IRISconsole/logs/alarms/`. The filename has the format *graphname.<timestamp>.xrt*; for example, *voltage.951231.1144.0.xrt*.

You can view alarm graph files by selecting “Display Saved Graph...” in the IRISconsole Hardware Status Monitor File menu; see “Displaying a Graph File,” later in this chapter.

Using a Notify Script

An option in the Global Controls window enables IRISconsole to run a script—`/var/IRISconsole/adm/scripts/icnotify.tclX`—when an alarm threshold is exceeded. This script, which was written in tclX (extended tcl), is self-documenting.

To edit this script, select “Edit Operator Notify Script” in the main window Options window. You must be root to edit this script.

For example, to cause an alarm threshold to send an e-mail message to a specified user, enter e-mail address(es) in the curly braces in the line

```
set OPERATORS { }
```

You can edit *icnotify.tclX* to include other scripts.

Saving Graph Data to a File

You can save a graph to a PostScript file or image file to send to service personnel, or to compare with other graph data saved to files.

To save a graph to a PostScript file, click the *Save As PS...* button in the Graph Control panel. Enter a filename and click the *Save* button to save the file and exit the dialog box.

To save a graph to an image file, follow these steps:

1. Freeze the data by clicking the Live Data Feed checkbox off in the Graph Control panel (see Figure 3-7 or Figure 3-8). The scrollbars under the graphs are activated.
2. Click the *Save As Graph* button in the Graph Control panel. A file selection dialog box appears, as shown in Figure 3-9.

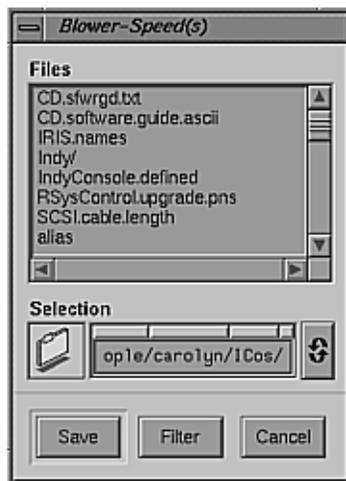


Figure 3-9 Saving a Graph File

If desired, click the *Filter* button to display a dialog box in which you can exclude filename patterns to restrict the filenames displayed.

3. Enter a filename for the graph file in the Selection field.
4. Click the *Save* button to save the file and exit the dialog box.

Displaying a Graph File

You can display the saved graph in IRISconsole by selecting “Display Saved Graph...” in the IRISconsole Hardware Status Monitor File menu. A dialog box similar to that shown in Figure 3-9 appears, in which you select the file to display. Files saved as graphs appear when they are selected; display files saved as PostScript files in your PostScript viewer.

Printing a Graph

You can print a graph as it is displayed in the Hardware Status Monitor.

To print the contents of a graph in the Hardware Status Monitor, follow these steps:

1. In the Hardware Status Monitor, select the graph you want.
2. If desired, change the dimensions of the graph by moving a sash (small square at the extreme right between the graphs).
3. If desired, select an area of the display by holding down the <ctrl> key and pressing the left mouse button; zoom the selection by moving the middle mouse button. (Press **r** to reset the display.)
4. When the screen displays the graph as you want it to be printed, click the *Print* button. In the Print dialog box, select the print options you want.

Error Messages and Warning Messages

This appendix lists error messages that can appear during operation of IRISconsole. It interprets each error message and suggests solutions. The messages are listed in alphabetical order.

Note: For CHALLENGE and Onyx system error messages and system event messages, see Appendix C in the *Deskside POWER CHALLENGE and CHALLENGE L Owner's Guide* and Appendix C in the *POWER CHALLENGE and CHALLENGE XL Rackmount Owner's Guide*.

<name> is a directory

You selected a directory to save into, when a file was expected.

A site edit session is in progress.
Finish that before opening.

It is not possible to open a site while its configuration information is being edited. Finish the editing first.

Cannot create directory <name>

Cannot create directory; permissions on */var/IRISconsole* should be writable by the user.

Cannot edit multiple configurations.

You have selected more than one site or system. Select one site or system at a time to edit.

Caution: Baud rate of a Challenge machine is typically 9600. Make sure that it is configured to handle this rate.

A legal value other than 9600 was entered in the Baud Rate: field of the Change Site Config dialog box. Although the baud rate can range from 300 to 115,200, any rate other than

the default rate of 9600 needs configuration changes in the managed CHALLENGE server to accept that rate. Note that this message is a warning and not an error message.

Couldn't find an ST-1600 attached to SCSI bus.

IRISconsole couldn't detect any ST-1600s that should have been attached to a SCSI port on the back of the Indy workstation. Follow these steps:

1. Check the SCSI target ID on the back of the ST-1600; make sure that it does not conflict with any other external devices that are attached. Do not use the settings 0 or 1.
2. Check the connections of the SCSI cable between the ST-1600 and the Indy SCSI port. Use the High Density SCSI-2 cable supplied with the ST-1600 or another cable meeting specifications outlined in the Technical Specifications chapter of the *IRISconsole ST-1600 Multiplexer Installation Guide*.
3. After checking and, if necessary, reseating connectors, ask IRISconsole to rescan by selecting "Show SCSI Bus Attachments" in the Options menu of the main IRISconsole window. This action displays the SCSI IDs of all ST-1600 multiplexers that IRISconsole finds.

Electronic Services' Call Logging Facility (escall) is not installed.

You have initiated an action that requires use of *escall*. The *escall* program is not included in the IRISconsole package; it is available only for sites in North America that have purchased the Support Advantage Electronic Services package. Contact your Sales Engineer for more information.

Error in getting Hardware Inventory.
Either the target system could not be reached, or
it's refusing service to the Login '*login*'

You tried to run *hinv* on a system in a site. Either the target system could not be reached, or it is refusing service to your login. Follow these steps:

1. Check the network connection with the target system (*ping* or another command as appropriate).
2. Check the login you have entered for that system: select the system and choose "Modify System Config" in the Edit menu of the site window.
3. Make sure that the login you entered has permission to perform a remote operation by typing

```
rsh <login>@<system> /sbin/hinv
```

If necessary, correct the login (or get its permissions changed) and retry the command above.

Error in ST-1600 software installation
Couldn't find /sbin/cdscanbus

The ST-1600 software subsystem has not been installed.
Install it from the distribution CD.

Failed to create config file

You have attempted to create a new site. Check the permissions on */var/IRISconsole* to see if it is writable for your login.

Failed to fetch /var/adm/SYSLOG: <reason>

The system has probably refused service to your login.
Follow these steps:

1. Check the login you have entered for that system: select the system and choose “Modify System Config” in the Edit menu of the site window.
2. Make sure that the login you entered has permission to perform the operation by typing

```
rsh <login>@<system> /bin/tail /var/adm/SYSLOG
```

If necessary, correct the login (or get its permissions changed) and retry the command above.

Failed to write to file

Your attempt to save the configuration file failed. Check permissions on */var/IRISconsole/.icrc.sitename* to see if it is writable for your login.

Invalid baud rate:
Should be between 300 and 115200.

An inappropriate baud rate was entered. Baud rates can range between 300 and 115200.

Invalid field value <value>

The value you entered in this field of the Change Site Config dialog box is invalid; try again.

Invalid System Console port number
Invalid Remote System Control port number

ST-1600 port numbers may range only from decimal 1 to 16.

Must select a site.
Must select a system.

An attempt was made to perform an operation on a site or system without actually selecting it. Single-click on the desired site or system first and try the action again.

No Availability Monitor information to report.
Either <system> doesn't have an 'availmon' running, or
it's refusing service to the Login <login>

Either the currently selected doesn't have an *availmon* running, or it is refusing service to your login. Check the login you have entered for that system: select the system and choose "Modify System Config" in the Edit menu of the site window. If necessary, correct the login (or get its permissions changed) and retry the operation.

The System Availability Monitoring Facility (*availmon*) is included in the *ee2.sw* subsystem and must be installed on the CHALLENGE server. After it is installed, activate it by typing `/etc/chkconfig avail on`.

No icons may be dropped into this panel.

This version of IRISconsole does not support drag and drop behaviors on icons. The icon(s) dropped will automatically be repositioned at their original locations.

No Remote System Control information to report.
Either <system> doesn't have a 'sysctldr' running, or
it's refusing service to the Login <login>

Either the currently selected system doesn't have a *sysctldr* running, or it is refusing service to your login.

If the connected system is a CHALLENGE S, you cannot perform the action you tried; this type of server has no system controller, which is required for this action.

For other connected systems, follow these steps:

1. Check the login you have entered for that system: select the system and choose "Modify System Config" in the Edit menu of the site window.
2. Make sure that the login you entered has permission to perform the operation by typing

```
rsh <login>@<system> /usr/etc/sysctldr -p
```

If necessary, correct the login (or get its permissions changed) and retry the command above.

Nothing selected.

You have specified an action for which a site or system must be selected. Select the item and try the action again.

Null input values aren't allowed.
Spaces not allowed in fields.

Enter a valid value in the field.

Null site name.
Null system name.

An attempt was made to create a site or system with a "null" name. Names must have at least one character and may not contain spaces.

Please close following site(s) before deleting

You attempted to delete a set of sites when a subset of it was still open. Close the site(s) and try the action again.

Port number must be between 1 and 16.

ST-1600 port numbers may range only from decimal 1 to 16.

Rename not allowed when site is open.

An attempt was made to rename a site that is already open. Close the site first.

SCSI ID must be between 2 and 7.

Inspect the back of the ST-1600 for the SCSI target ID used. To verify that the ST-1600 is installed properly, select "Show SCSI Bus Attachments" in the Options menu of the main IRISconsole window and check the SCSI ID displayed in the dialog box.

Site is already open.

An attempt was made to open a site that is already open. The site window appears at the top of the stack of windows.

Site name already exists.
Select it, then "Edit" its configuration.

**An attempt was made to create a site that exists already.
Create a unique site with a new name. To change the
configuration of an existing site, select it first.**

Spaces not allowed in fields.

Enter a valid value in the field.

System name already exists.
Select it, then "Edit" its configuration.

**An attempt was made to create a system that exists already.
Create a unique system with a new name. To change the
configuration of an existing system, select it first.**

/usr/sbin/sysmon not installed.

***sysmon.sw*, included in the base IRIX release, is a GUI-based
tool for analyzing syslogs. Install this system from the IRIX
5.3 with XFS CD for this feature to function.**

You must have *ee2.sw.uucp* installed.

**IRISconsole uses *uucp*-style locking on device nodes. Install
this subsystem from the IRIX 5.3 with XFS CD.**

Index

A

- alarm, 31-33
 - clearing, 32
 - graph file, 33
 - log file, 31
 - threshold
 - display log, 27
 - setting, 31-32
- Availability Monitor (Availmon) report, 24-25
 - problem, 41

B

- baud rate
 - configuring, 18, 37
 - invalid, 40
- buttons in site window, 20-21
 - protected features, 4, 20-21

C

- cable
 - port number, 14
 - configuring, 17
 - required, 3
- CHALLENGE/Onyx system, 1
 - ports, 1
- Console port, configuring, 17
 - invalid number, 40

conventions, x

D

displaying graph file, 35

E

- error messages, 37-43
- escal
 - not installed, 38
 - Start 'escal' feature availability, 28
 - starting, 31
- /etc/services*, editing for *ictelnet*, 21

G

- Generate NMI*, 20
 - and security, 4
- Get Console*, 20, 21
 - and security, 4
- Global Controls dialog box, 28
- graph
 - control panel, 30-33
 - displaying file, 35
 - printing file, 35
 - saving data to file, 34

H

hardware inventory (*hinv* output), 25
hardware status information, 26-30
Hardware Status Monitor, 26-27
 changing display, 27-29
 View menu, 27
hinv
 output, 25
 problem, 39
HW Reset, 20
 and security, 4
HW Status, 21, 26

I

icnotify.tclX, 33
.irc.sitename, 12
 problem writing to, 40
ictelnet, 21-23
IRISconsole
 access to remote systems, 1, 11
 connecting to remote, 21-23
 hardware requirements, 3
 monitoring attached systems, 24-30
 operation, 8-9
 security, *see* security
 security login and system login, 17

L

Log Console Activity to File, 21
log file
 alarms, 31
 for system activity, configuring, 18
login
 configuring, 17

 and IRISconsole security login, 17
 security, 5, 6

N

non-maskable interrupt, generating, 20
notify script, 33

P

password
 changing, 6-7
 security, 5, 6
Power Cycle, 20
 and security, 4
printing graph file, 35

R

remote access, 21-23
 login and password, 23
Remote System Control port, 1
 and ST-1600 port number, 14
 configuring, 17
 invalid number, 40
 problem getting information, 41

S

saving graph as file, 34
security, 4-8
 adding administrator, 5
 adding user, 5-6
 changing password, 6-7
 deleting administrator or user, 7
 determining if off or on, 5

login, 5, 6
 and remote access, 23
password, 5, 6
 and remote access, 23
protected features, 4
setting on or off, 8
viewing list, 8
Show Console Logs, 21
 and security, 4
site
 adding, 12-13
 adding systems to, 16-18
 administering, 19-35
 configuring, 11-18
 entering changes, 18
 defined, 3
Spy Console, 20
 and security, 4
ST-1600, ix, 1
 port number, 14
 problem, 38
 SCSI ID
 checking, 14
 configuring system, 17
 software installation problem, 39
Steal Console, 20
 and security, 4
system
 adding to site, 16-18
 administration, 20-21
 see also IRISconsole, monitoring attached systems
System Console port, 1
 and ST-1600 port number, 14
system log (syslog), 25
 problems, 40

U

/usr/sbin/sysmon problem, 43

V

/var/IRISconsole/adm/scripts/icnotify.tclX, 33
/var/IRISconsole and config file, 39
/var/IRISconsole/logs/, 31
View menu, 27

We'd Like to Hear From You

As a user of Silicon Graphics documentation, your comments are important to us. They help us to better understand your needs and to improve the quality of our documentation.

Any information that you provide will be useful. Here is a list of suggested topics to comment on:

- General impression of the document
- Omission of material that you expected to find
- Technical errors
- Relevance of the material to the job you had to do
- Quality of the printing and binding

Please include the title and part number of the document you are commenting on. The part number for this document is 007-2872-001.

Thank you!

Three Ways to Reach Us



The **postcard** opposite this page has space for your comments. Write your comments on the postage-paid card for your country, then detach and mail it. If your country is not listed, either use the international card and apply the necessary postage or use electronic mail or FAX for your reply.



If **electronic mail** is available to you, write your comments in an e-mail message and mail it to either of these addresses:

- If you are on the Internet, use this address: techpubs@sgi.com
- For UUCP mail, use this address through any backbone site:
[your_site]!sgi!techpubs



You can forward your comments (or annotated copies of manual pages) to Technical Publications at this **FAX** number:

415 965-0964