SGIconsole™ 2.0 Start Here

New Features in This Manual

This rewrite of *SGIconsole 2.0 Start Here* supports the 2.0 release of SGIconsole.

Major Documentation Changes

This release adds the following information:

- Added information about upgrading your system from the SGIconsole 1.1 to the SGIconsole 2.0 release in "Upgrading from SGIconsole 1.1 to SGIconsole 2.0", page 13.

- Added information about file location changes between the SGIconsole 1.1 release and SGIconsole 2.0 release in "File Locations Changes from SGIconsole 1.1 to SGIconsole 2.0", page 20.

- Added information about installing the Red Hat Linux 8.0 or 9.0 release in "Installing Red Hat Linux 8.0 or 9.0 Release", page 21.

- Updated configuration instructions in "Configuring SGIconsole 2.0", page 31.

- Added information about how to determine the hardware address of an L2 controller in "Determining the Hardware Address of the L2 System Controller", page 44.

- Added information about replacing the EtherLite firmware with Realport firmware in "Replacing EtherLite Firmware with Realport Firmware", page 55.

Record of Revision

Version	Description
001	November 2001 Original Publication. Supports the SGIconsole 1.0 release.
002	August 2002 Supports the SGIconsole 1.1 release.
003	August 2003 Supports the SGIconsole 2.0 release.

Contents

Figures

Procedures

About This Guide

This guide documents SGIconsole release 2.0.

SGIconsole is a combination of hardware and software that allows you to manage multiple servers.

This guide contains the following chapters:

- Chapter 1, "Introduction", page 1
- Chapter 2, "SGIconsole Software", page 5
- Chapter 3, "Getting Started", page 11

Obtaining Publications

To obtain SGI documentation, go to the SGI Technical Publications Library at:

`http://docs.sgi.com`

You can view documentation online or order printed copies through the library.

Conventions

The following conventions are used throughout this document:

Convention	Meaning
command	This fixed-space font denotes literal items such as commands, files, routines, path names, signals, messages, and programming language structures.
variable	Italic typeface denotes variable entries and words or concepts being defined.

user input	This bold, fixed-space font denotes literal items that the user enters in interactive sessions. Output is shown in nonbold, fixed-space font.
manpage(*x*)	Man page section identifiers appear in parentheses after man page names.

Reader Comments

If you have comments about the technical accuracy, content, or organization of this document, contact SGI. Be sure to include the title and document number of the manual with your comments. (Online, the document number is located in the front matter of the manual. In printed manuals, the document number is located at the bottom of each page.)

You can contact SGI in any of the following ways:

* Send e-mail to the following address:

  techpubs@sgi.com

* Use the Feedback option on the Technical Publications Library World Wide Web page:

  http://docs.sgi.com

* Contact your customer service representative and ask that an incident be filed in the SGI incident tracking system.

* Send mail to the following address:

  Technical Publications
  SGI
  1600 Amphitheatre Parkway, M/S 535
  Mountain View, California 94043-1351

* Send a fax to the attention of "Technical Publications" at +1 650 932 0801.

SGI values your comments and will respond to them promptly.

Introduction

This chapter introduces SGIconsole. The sections in this chapter include:

- "What Is SGIconsole", page 1
- "Why Use SGIconsole", page 1
- "Related Documentation", page 2

What Is SGIconsole

SGIconsole 2.0 is a suite of software that allows you to manage multiple SGI servers running the IRIX or Linux operating system. These servers include SGI servers, SGI partitioned systems and large, single-system-image servers, including legacy SGI servers and Silicon Graphics graphical systems.

SGIconsole consists of software suite including the Console Manager package and Performance Co-Pilot (PCP), which provides access to common remote management tools for hardware and software. It is intended to replace the SGI IRISconsole product.

SGIconsole 2.0 assumes your SGIconsole machine and your remote display for viewing and running SGIconsole applications are behind a secure firewall. SGIconsole 2.0 uses standard Linux security features. For information on how to improve security when using SGIconsole, see the " Console Manager Server Security in Secure Mode" section in the *Console Manager for SGIconsole Administrator's Guide*.

Note: SGIconsole supports remote-displaying. For a list of supported SGIconsole clients and displays, see the SGIconsole release notes.

Why Use SGIconsole

SGIconsole provides a central server control environment that has the following features:

- Support for SGI clusters, partitioned systems, and large single-system-image servers

- Expandability to support additional servers

- Software applications and tools for installation and configuration, console functionality, and for monitoring and managing system-level performance

- Web-based user interface

Related Documentation

The following SGIconsole and related documents are available at `http://docs.sgi.com`:

- *SGIconsole Hardware Connectivity Guide*

    This guide describes how to install the SGIconsole for use with the SGI Origin 200, SGI Origin 2000, and SGI Origin 300, and SGI Origin 3000, and SGI Altix 3000 products.

- *Console Manager for SGIconsole Administrator's Guide*

    This guide documents the Console Manager graphical user interface for SGIconsole that allows it to control multiple SGI servers, SGI partitioned systems, large, single-system image servers, and clusters of systems.

- *IRISconsole to SGIconsole Migration Guide*

    This guide compares the SGIconsole software to the IRISconsole software.

- *Performance Co-Pilot (PCP) Programmer's Guide*

    This guide describes how to write PCP extensions (Performance Metric Domain Agents, or PMDAs) using the PMAPI, for customizing and adapting PCP for the collection application performance data on operating system and application software components not addressed by the PCP base software.

- *Performance Co-Pilot (PCP) for IRIX User's and Administrator's Guide*

    This guide describes the Performance Co-Pilot (PCP) software package of advanced performance tools for the SGI family of graphical workstations and servers. It documents he PCP features that are embedded in the IRIX operating system. It is a prequel to the Performance Co-Pilot for IRIX Advanced User's and Administrator's Guide.

- *Performance Co-Pilot for IA-64 Linux User's and Administrator's Guide*

  This guide documents the the Performance Co-Pilot (PCP) software package running on IA-64 Linux systems. PCP provides a systems-level suite of tools that cooperate to deliver integrated performance monitoring and performance management services spanning the hardware platforms, operating systems, service layers, Database Management Systems (DBMSs), and user applications.

- *SGI L1 and L2 Controller Software User's Guide*

  This guide describes how to use the L1 and L2 controller commands at your system console to monitor and manage the following systems: SGI Origin 3000 series of servers, SGI Origin 300 series of servers, and SGI Altix 3000 family of servers and superclusters, SGI Origin 300 systems with NUMAlink, SGI Onyx 3000 series of graphics systems, and the SGI Onyx 300 series of graphics systems.

- *SGI Origin 3000 Series Owner's Guide*

  This guide provides an overview, and describes how to set up and operate the SGI Origin 3000 servies of servers.

- *SGI Origin 300 User's Guide*

  This guide provides an overview, and describes how to set up and operate the SGI Origin 300 server.

- *SGI Altix 3000 User's Guide*

  This guide provides an overview of the architecture and descriptions of the major components that compose the SGI Altix 3000 family of servers and superclusters. It also provides the standard procedures for powering on and powering off the system, basic troubleshooting information, and important safety and regulatory specifications.

- *SGI 1100 Server Owner's Guide*

- *SGI 1100 Server Quick Start Guide*

- *SGI 1100 Server Maintenance and Upgrade Guide*

SGIconsole Software

SGIconsole includes the following software tools that enable you to monitor and manage multiple servers:

- "Console Manager for SGIconsole", page 5

- "Performance Co-Pilot (PCP)", page 6

- "System Controller Software", page 9

Console Manager for SGIconsole

Console Manager is a graphical user interface for the SGIconsole management and monitoring tool used to control multiple nodes. A *node* is an SGI server or graphic system. For detailed information about Console Manager, see the *Console Manager for SGIconsole Administrator's Guide*. The manual is provided on the SGIconsole software installation CD and is available at the SGI Technical Publications library at: `http://docs.sgi.com`.

Console Manager provide the following functions:

- Console window

- Power down, power up, reset, or send a nonmaskable interrupt (NMI) to a node

- Get, steal, spy system console and system controller console

- Console logging

- Node and task privileges for the Console user

- Continuous system connection without console window active

- Numerous connections to any one system

- Remote access

- Console security

Only the root user of Console Manager can add or delete other users, assign privilege, and run command line interfaces (CLIs). Console Manager runs only one `setuid` program called `runpriv`.

tscm(1) is a command line interface to SGIconsole that any normal user can use. It provides an interactive menu-driven environment for performing console, logging, and power control operations on nodes configured in SGIconsole. For more information about tscm(1), see *Console Manager for SGIconsole Administrator's Guide* and the tscm(1) man page.

Performance Co-Pilot (PCP)

SGI Performance Co-Pilot (PCP) is a distributed toolkit that administrators can use to monitor and manage system-level performance of servers (such as system load, network load, disk hotspots, and capacity planning). The SGIconsole implementation of PCP uses existing PCP services on the managed servers to export performance data that is used by monitoring tools on the SGIconsole system. Note that IRIX servers must have PCP licenses in order for this toolkit to function.

Initial access to the PCP toolkit is accomplished through the SGIconsole GUI, which provides a Web-based interface for launching PCP tools. PCP tools monitor the following resource demands and performance metrics on the managed servers:

* Desktop gadget to monitor overall system activity across the following:

    – CPUs

    – Disks

    – Load average

    – Network interfaces

    – Memory usage

* Time-series (stripchart) monitoring of the following:

    – Summary statistics for an overview

    – Aggregate CPU utilization

    – Aggregate demand for disk bandwidth

    – File system fullness

    – Network throughput per interface

    – NFS client and server call rates

- Virtual memory paging activity

- Aggregate system call rates

• Three-dimensional performance visualizations for the following:

- Per processor CPU utilization

- Per spindle disk activity

- CPU and network activity

- NUMAlink interconnect activity for SGI Origin 2000 series and SGI Origin 3000 series

PCP tools on the SGIconsole system can also be used to create customized performance monitoring and performance management services for the managed servers. The following list describes relevant tools:

clustervis	Three-dimensional bar charts of CPU utilization and network traffic for one or more nodes (hosts) in a cluster. The presentation provides a scalable overview of the performance of large clusters. For more information see the clustervis(1) man page.
dkvis	A three-dimensional bar chart showing activity in the disk subsystem. For more information see the dkvis (1) man page.
mpvis	A three-dimensional bar chart of multiprocessor CPU utilization. For more information see the mpvis(1) man page.
oview	Three-dimensional bar charts covering many aspects of system performance, including disk use, job load, memory, CPU activity, and network I/O. For more information see the oview(1) man page.
pmchart	Trends over time for arbitrarily selected performance metrics from one or more nodes, or from one of more performance metric domains. For more information see the pmchart(1) man page.
pmgcluster	An animated display based on the hardware configuration of multiple servers, showing the same types of information as that provided by the pmgsys

utility. For more information see the `pmgcluster`(1) man page.

pmgsys   An animated display based on the hardware configuration of a server, showing CPU utilization, load average, memory utilization, network bandwidth demand, and disk activity. For more information see the `pmgsys`(1) man page.

For more detailed information on PCP, see the PCP documentation provided on the SGIconsole software CD or available online from the SGI Technical Publications Library at `http://docs.sgi.com`.

The PCP documents describe the IRIX version of the PCP product, which differs only slightly from the Linux version. Table 2-1 summarizes differences in file and directory pathnames between the IRIX and Linux operating systems.

Table 2-1 IRIX and Linux File/Directory Pathnames

File/Directory	IRIX	Linux
`rc/startup` scripts	`/etc/init.d`	`/etc/rc.d/init.d`
Private PCP binaries	`/usr/pcp/bin`	`/usr/share/pcp/bin`
Shared PCP files (shareable for diskless)	`/usr/pcp`	`/usr/share/pcp`
Directory of manual pages	`/usr/share/catman`	`/usr/man`
PCP logs	`/var/adm/pcplog`	`/var/log/pcp`
PCP documentation	`/var/pcp`	`/usr/doc/pcp-`*Version*
GUI privileged commands	`/usr/sysadm/privbin`	`/usr/lib/sysadm/privbin`
GUI commands log	`/var/sysadm/salog`	`/var/lib/sysadm/salog`
Directory for PCP demos and examples	`/var/pcp/demos`	`/usr/share/pcp/demos`
`magic`, as used by `files` (1)	`/etc/magic`	`/usr/share/magic`

System Controller Software

System controller software enables you to use an SGI Origin 3000 or SGI Altix 3000 series server's L1 controllers and the hardware L2 controllers or SGI Origin 2000 system single module System Controller (MSC) or SGI Origin 2000 rackmount system multimodule System Controller (MMSC) to manage and monitor the server from a remote system console. For more information on system controllers, refer to the documentation listed in "Related Documentation", page 2.

Please refer to `http://support.sgi.com` (SGI supportfolio web site) for the latest system controller software.

Getting Started

This chapter guides you through the steps for setting up and configuring SGIconsole hardware and software. The sections in this chapter include:

- "Setting Up SGIconsole", page 11

- "Using SGIconsole", page 48

Setting Up SGIconsole

To set up and configure your SGIconsole 2.0 system, follow the procedures described in these subsections:

- "Setting Up SGIconsole Hardware", page 12

- "Using the PROM Command Monitor", page 12

- "Installing Red Hat Linux 8.0 or 9.0 Release", page 21

- "Configuring Red Hat 8.0 or 9.0 Linux Server Installation", page 23

- "Installing SGIconsole 2.0", page 28

- "Configuring SGIconsole 2.0", page 31

Note: The SGIconsole reinstallation procedure is the same as the installation procedure after you have removed the SGIconsole rpms.

Note: If your SGIconsole machine has a blank disk, then you will need to go through all the procedures in the order described in this section.

Note: SGIconsole 2.0 assumes your SGIconsole machine and your remote display for viewing and running SGIconsole applications are behind a secure firewall. SGIconsole 2.0 uses standard Linux security features. For information on how to improve security when using SGIconsole, see the " Console Manager Server Security in Secure Mode" section in the *Console Manager for SGIconsole Administrator's Guide*.

Setting Up SGIconsole Hardware

To determine which hardware platforms and multiplexers that can be used with SGIconsole and to cable and configure SGIconsole hardware, read and follow the instructions in the *SGIconsole Hardware Connectivity Guide*. This guide is delivered with your SGIconsole system and is available online at `http://docs.sgi.com`.

Using the PROM Command Monitor

This section describes the command (PROM) monitor programs, which control the boot environment for all SGI workstations and servers running the IRIX operating sytem. With the command monitor, you can boot and operate the CPU under controlled conditions, run the CPU in command monitor mode, and load programs (for example, the operating system kernel, `/unix`, or special debugging and execution versions of the kernel). For detailed information on the PROM monitor, see the `prom(1M)` man page and Chapter 9, "Using the Command (PROM) Monitor" in *IRIX Admin: System Configuration and Operation*.

For SGI servers, the installed PROM default variables are correct for use with SGIconsole. For SGI desktop systems, if no keyboard is plugged in when the system is powered on (or reboot on machines), then the PROM uses the first serial port for I/O.

Procedure 3-1 Using the PROM Command Monitor

You can force the correct behavior for all SGI desktop, servers, and visualization systems as follows:

1. Set the PROM variable `console` to `d`. This can be done two ways:

    a. From the PROM monitor prompt, perform the following:

    setenv console d

    b. From the IRIX operating system, as root user perform the following:

    nvram console d

2. Return the `alt console` line in `/etc/inittab` file to the originally installed value (if different) as follows:

    ```
    t1:23:respawn:/sbin/suattr -C CAP_FOWNER,CAP_DEVICE_MGT,
    CAP_DAC_WRITE+ip -c "exec /sbin/getty ttyd1 console"
    ```

The `:23:` variable can be different on your machine if you have created more run levels for site purposes. The `alt console` variable for the `getty`(1M) process must be enabled on all stable run levels (not on single-user (s) or on the transition run levels: 0, 1, or 6. Single-user has a shell on the console. If you add another shell, configuring systems to run with SGIconsole will be more difficult.

Upgrading from SGIconsole 1.1 to SGIconsole 2.0

This section contains procedures to follow if you are updating your system from SGIconsole 1.1 to SGIconsole 2.0. The SGIconsole 2.0 release requires that you update to the Red Hat Linux 8.0 or 9.0 release.

Procedure 3-2 Upgrading from SGIconsole 1.1 to SGIconsole 2.0

To upgrade your system from SGIconsole 1.1 to SGIconsole 2.0, perform these steps:

1. Back up your SGIconsole 1.1 configuration data by following the steps in

2. Reconfigure the flash BIOS on your SGI 1100 server as described in the Procedure 3-4, page 20.

3. Install the Red Hat Linux 8.0 or 9.0 release as described in "Installing Red Hat Linux 8.0 or 9.0 Release", page 21.

4. Configure the Red Hat Linux 8.0 or 9.0 server installation as described in "Configuring Red Hat 8.0 or 9.0 Linux Server Installation", page 23.

5. Install the SGIconsole 2.0 release as described in "Installing SGIconsole 2.0", page 28.

6. Configure the SGIconsole 2.0 release as described in "Configuring SGIconsole 2.0", page 31.

7. Restore SGIconsole 1.1 data as described in "Restoring SGIconsole 1.1 Data", page 39.

Backing up SGIconsole 1.1 Configuration Data

This section describes the steps you need to take to back SGIconsole 1.1 configuration data.

Procedure 3-3 Backing up SGIconsole 1.1 Configuration Data

To back up SGIconsole 1.1 configuration data, perform the following procedure:

1. Insert and mount an empty DOS formatted floppy using the mount command, as
   follows:

   ```
   [root@linux3 sysadm]# mount /dev/fd0
   ```

2. Use the copy command to save the dhcpd configuration file that contains needed
   hardware and device address information for the L2 system controllers and Digi
   EL-16 multiplexers used by SGIconsole, as follows:

   ```
   [root@linux3 sysadm]# cp /etc/dhcpd.conf /mnt/floppy/dhcpd.conf
   ```

   Use the cat(1) command to view an example of the /etc/dhcpd.conf file, as
   follows:

   ```
   [root@linux3 /root]# cat /etc/dhcpd.conf
   # Created by SGIconsole_startup. Do not remove this line.
   # Define subnet
   subnet 192.12.1.0 netmask 255.255.255.0 {
   }

   # Begin group options
   group {
       option subnet-mask 255.255.255.0;
       option broadcast-address 192.12.1.255;

       # Device information
       host dino-l2 {
           hardware Ethernet 08:00:69:11:81:18;
           fixed-address 192.12.1.10;
       }
       # Device information
       host el-16 {
           hardware Ethernet 00:a0:e7:21:88:f9;
           fixed-address 192.12.1.20;
       }
       host el-16-2 {
           hardware Ethernet 00:a0:e7:21:c7:e3;
           fixed-address 192.12.1.21;
       }
   }
   # End group options
   ```

3. Use the copy command to save Digi configuration file that contains additional information from the Etherlite driver, as follows:

```
[root@linux3 sysadm]# cp /etc/els.conf /mnt/floppy/els.conf
```

Use the cat(1) command to view an example of an els.conf file, as follows:

```
[root@linux3 /root]# cat /etc/els.conf
#elsnn  EL-type IP-address options( e.g. -t 600)
els0 EL-16 192.12.1.20 -t=120
els1 EL-16 192.12.1.21 -t=120
```

4. Use the copy command to save the VACM configuration file, as follows:

```
cp /usr/lib/vacm/vacm_configuration /mnt/floppy/vacm_configuration
```

Use the cat(1) command to view an example of the vacm_configuration file, as follows:

```
[root@linux3 /root]# cat /usr/lib/vacm/vacm_configuration
# VACM Configuration file
# Autogenerated by Nexxus - Thu Jun  5 17:23:19 2003

GROUP:default
#Definition for node 'O3000_dino_L2'
NODE:O3000_dino_L2
VAR:L2:L2_NODE:192.12.1.10
VAR:GLOBAL:IP_ADDRESS:dino.engr.sgi.com
END_NODE

#Definition for node 'O300_skinwalker_L1'
NODE:O300_skinwalker_L1
VAR:L1:L1_SERIAL_PORT:/dev/ttyN001
VAR:GLOBAL:IP_ADDRESS:skinwalker.engr.sgi.com
END_NODE

#Definition for node 'O200_lightning1_MSC'
NODE:O200_lightning1_MSC
VAR:MSC:USER:root
VAR:MSC:(M)MSC_SERIAL_PORT:/dev/ttyN012
VAR:MSC:CONSOLE_SERIAL_PORT:/dev/ttyN011
VAR:MSC:CONSOLE_SERIAL_PORT_SPEED:9600
VAR:GLOBAL:IP_ADDRESS:lightning1.engr.sgi.com
```

```
VAR:MSC:MSC_PASSWORD:none
END_NODE

#Definition for node 'O2000_espanola_MMSC'
NODE:O2000_espanola_MMSC
VAR:MMSC:USER:root
VAR:MMSC:(M)MSC_SERIAL_PORT:/dev/ttyN007
VAR:GLOBAL:IP_ADDRESS:espanola.engr.sgi.com
VAR:MMSC:MMSC_SUPERVISOR_PASSWORD:
VAR:MMSC:MMSC_SERVICE_PASSWORD:
END_NODE

#Definition for node 'sgi550_scar_SCO'
NODE:sgi550_scar_SCO
VAR:SCO:SCO_SERIAL_PORT:/dev/ttyN010
VAR:SCO:SCO_SERIAL_PORT_SPEED:9600
VAR:SCO:SCO_SERIAL_PORT_PARITY:NONE
VAR:SCO:SCO_SERIAL_PORT_HANDSHAKING:NONE
VAR:GLOBAL:IP_ADDRESS:scar.engr.sgi.com
END_NODE
GROUP_END

#End of node definitions

#Definition for user 'blum'
USER:blum
PASSWORD:HIDm9A.QjlDz2
GROUP:default
DEFAULT_MODULE_POLICY:ALLOW
DEFAULT_ADDRESS_POLICY:DENY
ADDR_ACL:ALLOW:127.0.0.1:32
END_USER

#Definition for user 'root'
USER:root
PASSWORD:HIX6StIDsOMvU
GROUP:default
DEFAULT_MODULE_POLICY:ALLOW
DEFAULT_ADDRESS_POLICY:DENY
ADDR_ACL:ALLOW:127.0.0.1:32
END_USER
```

```
#Definition for user 'nisuser'
USER:nisuser
PASSWORD:HIX6StIDsOMvU
GROUP:default
DEFAULT_MODULE_POLICY:ALLOW
DEFAULT_ADDRESS_POLICY:DENY
ADDR_ACL:ALLOW:127.0.0.1:32
END_USER

#Definition for user 'testuser'
USER:testuser
PASSWORD:HIX6StIDsOMvU
GROUP:default
DEFAULT_MODULE_POLICY:ALLOW
DEFAULT_ADDRESS_POLICY:DENY
ADDR_ACL:ALLOW:127.0.0.1:32
END_USER
```

5. Use the copy command to save the SGIconsole data directory that contains all group, user, and node information, as follows:

   cp -R /var/lib/SGIconsole/ /mnt/floppy/

   Use the ls(1) command to view the contents of SGIconsole directory, as follows:

   ```
   [root@linux3]# ls -R SGIconsole/
   SGIconsole/:
   group   groups   nodes   users

   SGIconsole/group:

   SGIconsole/groups:
   alltasks_all_nodes   sometasks

   SGIconsole/nodes:
   O2000_espanola_MMSC   O3000_dino_L2        sgi550_scar_SCO
   O200_lightning1_MSC   O300_skinwalker_L1

   SGIconsole/users:
   nisuser   root   testuser
   ```

6. Use the copy command to save system password file that contains local user information, as follows:

```
[root@linux3 sysadm]# cp /etc/passwd /mnt/floppy/passwd
```

Use the cat(1) command to view an example of the /etc/passwd file, as follows:

```
[root@linux3 SGIconsole-logs]# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:
daemon:x:2:2:daemon:/sbin:
adm:x:3:4:adm:/var/adm:
lp:x:4:7:lp:/var/spool/lpd:
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:
news:x:9:13:news:/var/spool/news:
uucp:x:10:14:uucp:/var/spool/uucp:
operator:x:11:0:operator:/root:
games:x:12:100:games:/usr/games:
gopher:x:13:30:gopher:/usr/lib/gopher-data:
ftp:x:14:50:FTP User:/home/ftp:
nobody:x:99:99:Nobody:/:
xfs:x:43:43:X Font Server:/etc/X11/fs:/bin/false
named:x:25:25:Named:/var/named:/bin/false
gdm:x:42:42::/home/gdm:/bin/bash
piranha:x:60:60::/home/httpd/html/piranha:/dev/null
postgres:x:26:26:PostgreSQL Server:/var/lib/pgsql:/bin/bash
pvm:x:24:24::/usr/share/pvm3:/bin/bash
squid:x:23:23::/var/spool/squid:/dev/null
testuser:x:54580:31::/home/testuser:/bin/bash
```

7. Use the copy command to save shadow password file, if enabled, that contains additional local user information, as follows:

```
[root@linux3 sysadm]# cp /etc/shadow /mnt/floppy/shadow
```

Use the cat(1) command to view an example of the /etc/shadow file, as follows:

```
[root@linux3 SGIconsole-logs]# cat /etc/shadow
root:$1$H8q0Kzaf$ZWksDiHzk1LDtCdK3N7tt1:12194:0:99999:7:-1:-1:134539228
bin:*:12194:0:99999:7:::
```

```
daemon:*:12194:0:99999:7:::
adm:*:12194:0:99999:7:::
lp:*:12194:0:99999:7:::
sync:*:12194:0:99999:7:::
shutdown:*:12194:0:99999:7:::
halt:*:12194:0:99999:7:::
mail:*:12194:0:99999:7:::
news:*:12194:0:99999:7:::
uucp:*:12194:0:99999:7:::
operator:*:12194:0:99999:7:::
games:*:12194:0:99999:7:::
gopher:*:12194:0:99999:7:::
ftp:*:12194:0:99999:7:::
nobody:*:12194:0:99999:7:::
xfs:!!:12194:0:99999:7:::
named:!!:12194:0:99999:7:::
gdm:!!:12194:0:99999:7:::
piranha:!!:12194:0:99999:7:::
postgres:!!:12194:0:99999:7:::
pvm:!!:12194:0:99999:7:::
squid:!!:12194:0:99999:7:::
testuser:xWMVKkegTeXxg:12209:0:99999:7:::
```

8. Use the copy command to save the sysadm user file that contains all SGIconsole usernames, as follows:

```
[root@linux3 sysadm]# cp /var/lib/sysadm/privilegedUsers /mnt/floppy/privilegedUsers
```

Use the cat(1) command to view an example of privilegedUsers file, as follows:

```
[root@linux3 sysadm]# cat privilegedUsers
nisuser testuser
```

9. Console log files are most likely to large to fit on the floppy disk. They should be saved to another system if necessary. The Console log files are located in the following directory:

```
/home/httpd/html/SGIconsole-logs/
```

10. Unmount and remove the floppy, as follows:

```
[root@linux3 sysadm]# umount /mnt/floppy
```

Reconfiguring the Flash BIOS

The SGI 1100 server provided with SGIconsole 1.1 is single processor. There is a basic input/output system (BIOS) change that you must perform before installing Red Hat 8.0 or Red Hat 9.0 described in the following procedure:

Procedure 3-4 Reconfiguring the Flash BIOS on an SGIconsole 1.1 Platform

To reconfigure the flash BIOS on your SGIconsole 1.1 platform, perform the following procedure:

1. At the SGI logo screen press **Ctrl-Alt-ESC** to enter **Setup**.

2. Select **Load Default Settings** from the menu and press **Enter**.

3. Press **F8** to enable advanced options.

4. Select **Advanced Options** from the menu.

5. Select **CPU Frequency** from the **Advanced Options** menu.

6. Go to the Single Processor MP Table and use the left/right arrow to select **Disabled**.

7. Use the ESC key to exit out of **Setup**.

8. Boot the system.

File Locations Changes from SGIconsole 1.1 to SGIconsole 2.0

This section describes file location changes from the SGIconsole 1.1 release to the SGIconsole 2.0 release.

The following file locations have changed:

- In Red Hat 8.0 and Read Hat 9.0 releases, the default document root for Apache web server is /var/www/html. In the Red Hat 6.2 Base Linux release, it is located in /home/httpd/html.

- In the Red Hat 8.0 and 9.0 releases, the xinetd(8) extended Internet services daemon replaces the inetd(8) daemon.

- In the Red Hat 8.0 and 9.0 releases, the /etc/xinetd.conf configuration file replaces the /etc/inetd.conf configuration file with additional configuration files for Red Hat 8.0 and 9.0 in the /etc/xinetd/xinetd.d directory.

- The location of the SGIconsole log files has changed from
  `/home/httpd/html/SGIconsole_logs` to
  `/var/www/html/SGIconsole_logs`.

- The `/tmp/els00.log` no longer exists. To determine the status of your EL-16
  device, you can view information in the `/proc/dgrp/config` and
  `/proc/dgrp/nodeinfo` files.

Installing Red Hat Linux 8.0 or 9.0 Release

SGI suggests that you begin with a clean install of the Red Hat Linux 8.0 release.

Note: If you are installing Red Hat Linux 8.0 or 9.0 on an SGIconsole 1.1 platform
make sure you have performed Procedure 3-4.

Procedure 3-5 Installing Red Hat Linux 8.0 or 9.0 Release

Follow these instructions:

1. Back up your data.

2. Repartition or erase your disks.

   Note: In the Red Hat Linux 8.0 or 9.0 release, the filesystem type has changed
   from `ext2` to `ext3`.

3. The installation requirements list for the Red Hat 8 and 9 releases are, as follows:

   - Red Hat 8.0/9.0 server installation

   - Security (`ipchains`(1) configuration) disabled

   - Additional packages to install are, as follows:

     – Developer tools

     – Editors

     – FTP server

     – DHCP server

     – Kernel development

     – Network servers

     – System tools

     – X Software Development

     – X Window System

- Additional RPMs to install are, (install after `anaconda`(1) has finished and you are logged in as root on a running system) as follows:

     – `compat-libstdc++-7.3-2.96.110`

     – `imlib-1.9.13-9`

     – `tftp-server-0.32.4`

     – `telnet-server-0.17-25`

Note: Versions for Red Hat 9 appear here; those of Red Hat 8 may differ.

4. You are now ready to install SGIconsole 2.0 on your system. Follow the instructions in "Installing SGIconsole 2.0", page 28.

Creating a KickStart floppy

For convenience, a KickStart floppy image resides on the SGIconsole 2.0 CD under the `images` directory.

There are now two kickstart floppy images on the CD. One for the Red Hat 8 release and one for the Red Hat 9 release, as follows:

- `SGIconsole2.0-RH8.0.img`

- `SGIconsole2.0-RH9.0.img`

To create a KickStart floppy, copy the image to a blank DOS-formatted floppy disk:

1. Insert and mount the SGIconsole 2.0 CD, using the following command:

   `mount /dev/cdrom /mnt/cdrom`

2. Insert the blank, formatted floppy.

3. Copy the image from the CD to the floppy, using the following commands:

- For the Red Hat 8.0 release, perform the following:

```
dd if=/mnt/cdrom/images/SGIconsole2.0-RH8.0.img of=/dev/fd0
```

- For the Red Hat 9.0 release, perform the following:

```
dd if=/mnt/cdrom/images/SGIconsole2.0-RH9.0.img of=/dev/ds0
```

Configuring Red Hat 8.0 or 9.0 Linux Server Installation

If, when you power up the system, it displays only a blank screen, you will need to install Red Hat 8.0 Linux (refer to "Installing Red Hat Linux 8.0 or 9.0 Release", page 21). When the installation is complete, reboot the system and continue with configuring Red Hat 8.0 or 9.0 Linux.

The system will boot up running the Red Hat 8.0 or 9.0 Linux Server kernel to the init level 3 (text mode, multiuser). You will be automatically prompted for the following information to configure Red Hat 8.0 or 9.0 for use by SGIconsole. You will need to provide certain information such as host name, IP address, and so on. Have this information available before you start this procedure.

Note: If you are interrupted midway through this procedure, or if you want to rerun this configuration, enter the following command at the Linux prompt (as `root`): `touch /.unconfigured`Then reboot the system and enter the configuration information at the prompts.

The Red Hat 8 kickstart image will not `touch /.unconfigured` because there is a problem with font support in Red Hat 8 that makes the configuration screens unreadable. The problem is fixed in the Red Hat 9 release so that kickstart image will create the file and boot into the configuration screens after installation.

If you are running Red Hat 8 on your system, run the configuration software by hand after initial login as root. Default root password is set to **sgisgi**.

Procedure 3-6 Configuring Red Hat 8.0 or 9.0 Linux Server Installation

1. The first screen will display **Changing password for user root** after mounting local filesystems, then it will prompt you for a new UNIX password. Set the `root` password to improve the system's security behind your firewall.

2. After the password is entered and verified, the first prompt will ask if you want to set up networking, as shown in Figure 3-1. To allow SGIconsole to access the systems it will be monitoring and managing, select **Yes**.
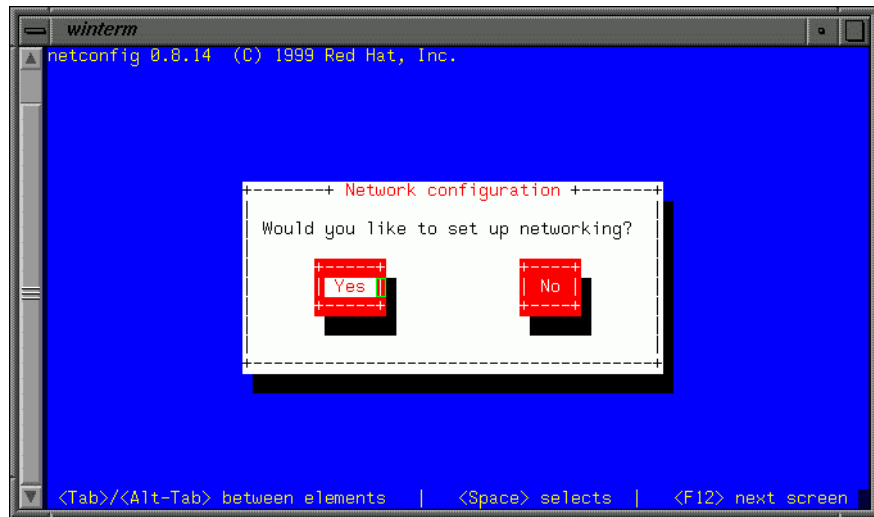
Figure 3-1 Network Configuration Screen

3. The **Configure TCP/IP** screen will prompt you to assign an Internet Protocol (IP) address to the SGIconsole system so it can participate in your network, as well as a netmask (for example, 255.255.255.0). If your network uses DNS, fill in the default gateway (IP) and primary nameserver.

   After you have entered the information for each of these settings, click on **OK**.
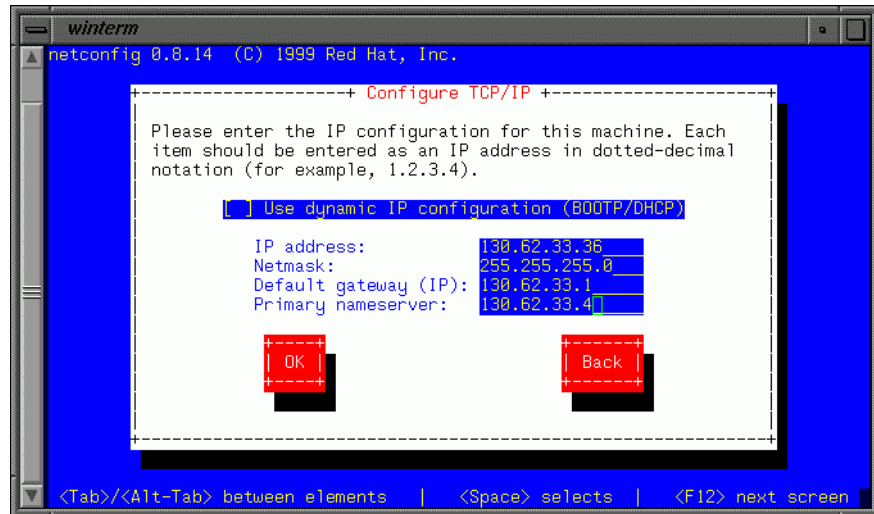
Figure 3-2 Configure TCP/IP Screen

4. In the **Authentication Configuration** screens, set authentication to control other users' access to the SGIconsole. In the first screen, select **Use NIS** for NIS users.
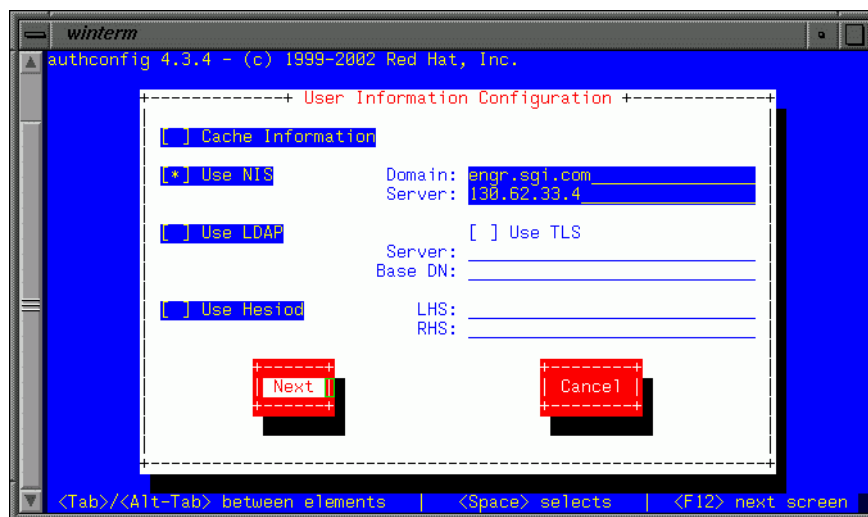
Figure 3-3 Authentication Configuration Screen (First)

In the second screen, select **Use Shadow Passwords** and **Enable MD5 Passwords**. After you have made your selections, click on **OK**.
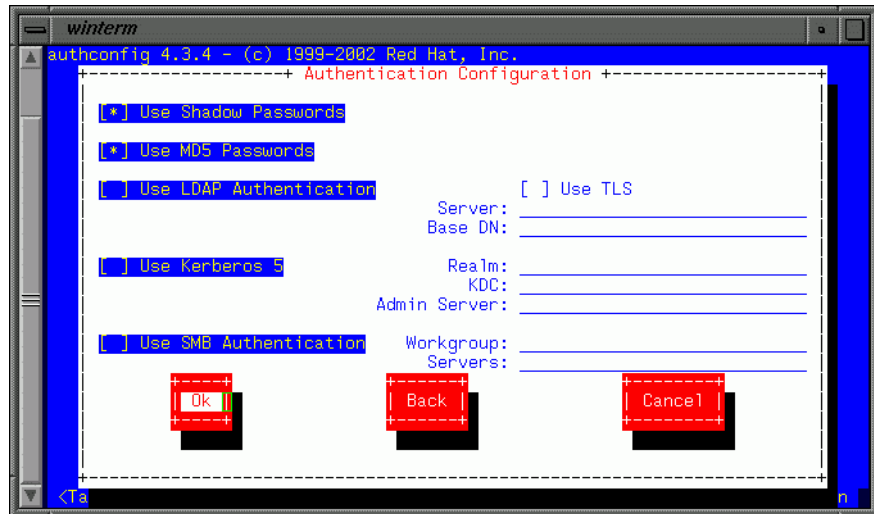
Figure 3-4 Authentication Configuration Screen (Second)

5. In the **Services** screen, use the default settings for services to be started automatically at SGIconsole boot-up. After you have reviewed the settings, click on **OK**.
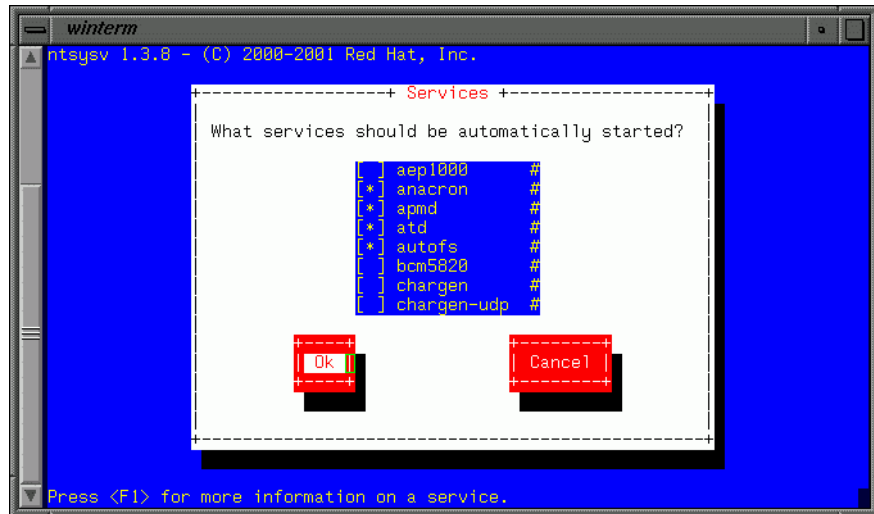
Figure 3-5 Services Screen

6. At this point the display should show the standard login prompt. Log in as root with your new password. The configuration of Red Hat 8.0 or 9.0 for use with SGIconsole is complete.

Installing SGIconsole 2.0

This describes how to install the SGIconsole 2.0 release.

Procedure 3-7 Installing SGIconsole 2.0

To install SGIconsole 2.0 software, follow these steps:

1. Log in as root.

2. Mount the SGIconsole 2.0 CD by executing the mount command as you have configured it. A common example is mount /dev/cdrom /mnt/cdrom.

3. Change directories to the root directory for the mounted CD. A common root directory is /mnt/cdrom.

4. Execute the command ./INSTALL.

Output similar to the following appears:

```
[root@linux3 image]# /install/INSTALL
Installed: /install/SGI/RPMS/pcp-RPMCollection.txt (collection)
Installed: /install/SGI/RPMS/sysadm_base-RPMCollection.txt (collection)
Installed: /install/SGI/RPMS/vacm-RPMCollection.txt (collection)
Installed: /install/SGI/RPMS/digiOthers-1.2-1.noarch.rpm
Installed: /install/SGI/RPMS/j2re-1.4.1_02-fcs-linux.i586.rpm
Installed: /install/SGI/RPMS/SGIconsole-2.0-1.noarch.rpm
Installed: /install/SGI/RPMS/SGIconsole-docs-2.0-0.noarch.rpm
Installed: /install/SGI/RPMS/SGIconsole-extra-2.0-1.noarch.rpm
Installed: /install/SGI/RPMS/snxsc_firmware-1.20.6-1.i386.rpm
Installed: /install/SGI/RPMS/snxsc_l3-1.20.1-1.i386.rpm
Installed: /install/SGI/RPMS/sysadm_console-client-2.0-1.i386.rpm
Installed: /install/SGI/RPMS/sysadm_console-server-2.0-1.i386.rpm
Installed: /install/SGI/RPMS/sysadm_console-web-2.0-1.i386.rpm
Installed: /install/SGI/RPMS/vacm-l1-1.3-1.i386.rpm
Installed: /install/SGI/RPMS/vacm-l2-1.6-1.i386.rpm
Installed: /install/SGI/RPMS/vacm-legacy-3.4-1.i386.rpm
Installed: /install/SGI/RPMS/vacm-sco-1.2-1.i386.rpm
Installation has been completed.  To check for errors, please examine
the log file:

    /root/log/INSTALL.log

Examine the installation log now?  [Y/n] n

Please run the script:

    /usr/share/SGIconsole/bin/SGIconsole_startup

to set up your system if installation has completed successfully.
```

If you choose to view the install log from the script or using the `cat` command, information similar to the following appears:

```
root@linux2 init.d]# cat /root/log/INSTALL.log
Jun 10 17:45:19:INSTALL[2320]: INSTALL (SGIconsole 2.0) started
Jun 10 17:45:54:INSTALL[2320]: Installing: /install/SGI/RPMS/pcp-2.3.0-17.i386.rpm
/install/SGI/RPMS/pcp-pro-2.3.0-17.i386.rpm
Jun 10 17:46:09:INSTALL[2320]: Installing: /install/SGI/RPMS/sysadm_base-client-3.0-4.i386.rpm
/install/SGI/RPMS/sysadm_base-dev-3.0-4.i386.rpm /install/SGI/RPMS/sysadm_base-lib-3.0-4.i386.rpm
```

```
/install/SGI/RPMS/sysadm_base-mkrhinoism-3.0-4.i386.rpm
/install/SGI/RPMS/sysadm_base-tcpmux-3.0-4.i386.rpm
/install/SGI/RPMS/sysadm_base-server-3.0-4.i386.rpm
... [2320]: Adding /usr/lib/sysadm/lib to ld.so.conf
... [2320]: Added the following lines to /etc/ld.so.conf:
... [2320]: /usr/lib/sysadm/lib
... [2320]: (end of lines added to /etc/ld.so.conf)
... [2320]: Running ldconfig
... [2320]: Adding tcpmux to inetd.conf
... [2320]: Couldn't find inetd.conf in /etc /usr/etc /usr/local/etc
... [2320]: Restarting inetd
... [2320]: inetd: no process killed
... [2320]: Restarting xinetd with -HUP
... [2320]: Adding sysadmd to tcpmux.conf
Jun 10 17:46:14:INSTALL[2320]: Installing: /install/SGI/RPMS/
vacm-2.0.5a-3.i386.rpm
/install/SGI/RPMS/vacm-clientlib-2.0.5a-3.i386.rpm
/install/SGI/RPMS/vacm-devel-2.0.5a-3.i386.rpm /install/SGI/RPMS/vacm-hoover-2.0.5a-3.i386.rpm
/install/SGI/RPMS/vacm-node-2.0.5a-3.i386.rpm
/install/SGI/RPMS/vacm-sercon-2.0.5a-3.i386.rpm /install/SGI/RPMS/vacm-vash-2.0.5a-3.i386.rpm
Jun 10 17:46:15:INSTALL[2320]: Installing: /install/SGI/RPMS/digiOthers-1.2-1.noarch.rpm
Jun 10 17:46:58:INSTALL[2320]: Installing: /install/SGI/RPMS/j2re-1.4.1_02-fcs-linux.i586.rpm
Jun 10 17:47:01:INSTALL[2320]: Installing: /install/SGI/RPMS/SGIconsole-2.0-1.noarch.rpm
Jun 10 17:47:14:INSTALL[2320]: Installing: /install/SGI/RPMS/SGIconsole-docs-2.0-0.noarch.rpm
Jun 10 17:47:15:INSTALL[2320]: Installing: /install/SGI/RPMS/SGIconsole-extra-2.0-1.noarch.rpm
Jun 10 17:47:32:INSTALL[2320]: Installing: /install/SGI/RPMS/snxsc_firmware-1.20.6-1.i386.rpm
Jun 10 17:47:35:INSTALL[2320]: Installing: /install/SGI/RPMS/snxsc_l3-1.20.1-1.i386.rpm
Jun 10 17:47:36:INSTALL[2320]: Installing: /install/SGI/RPMS/sysadm_console-client-2.0-1.i386.rpm
Jun 10 17:47:38:INSTALL[2320]: Installing: /install/SGI/RPMS/sysadm_console-server-2.0-1.i386.rpm
Jun 10 17:47:38:INSTALL[2320]: Installing: /install/SGI/RPMS/sysadm_console-web-2.0-1.i386.rpm
Jun 10 17:47:39:INSTALL[2320]: Installing: /install/SGI/RPMS/vacm-l1-1.3-1.i386.rpm
Jun 10 17:47:40:INSTALL[2320]: Installing: /install/SGI/RPMS/vacm-l2-1.6-1.i386.rpm
Jun 10 17:47:41:INSTALL[2320]: Installing: /install/SGI/RPMS/vacm-legacy-3.4-1.i386.rpm
Jun 10 17:47:42:INSTALL[2320]: Installing: /install/SGI/RPMS/vacm-sco-1.2-1.i386.rpm
Jun 10 17:47:42:INSTALL[2320]: INSTALL (SGIconsole 2.0) completed
[root@linux2 init.d]#
```

At this point you have completed installing SGIconsole 2.0 software. To verify your installation run the following command to verify the software.

```
rpm -qa | egrep "SGIconsole|pcp|vacm|sysadm" | sort
```

If SGIconsole is correctly installed, the output from this command will list the SGIconsole, PCP, and SGIconsole software packages. Go to "Configuring SGIconsole 2.0", page 31, for instructions on configuring SGIconsole software for use.

Configuring SGIconsole 2.0

This section describes how to configure SGIconsole 2.0.

Procedure 3-8 Configuring SGIconsole 2.0

To configure SGIconsole 2.0, begin by logging in as `root` and running the SGIconsole startup script:

`/usr/share/SGIconsole/bin/SGIconsole_startup`

The `sgiconsole_startup`(8) man page provides more information on the startup script.

- If you have not yet configured the Red Hat Linux 8.0 or 9.0 release for use by SGIconsole, the following error message will be displayed on the system:

  ```
  Error: You cannot run this startup script
  because you have not
  configured SGIconsole. To be guided through these steps, select
  "y" which will reboot the system and run the configuration program.

  Would you like to configure Linux for SGIconsole? [y/n]
  ```

  Choose **y** to configure Linux immediately. (If you choose **n** the script will quit and you will not be able to configure SGIconsole software.) In this case, perform the following command as **root**

  touch /.unconfigured

  and then reboot the system.

- If you have already configured Red Hat 8.0 or 9.0 Linux for use with SGIconsole, then follow the startup script.

The SGIconsole startup script begins by displaying the following introduction, which lists the steps in configuring SGIconsole:

`SGIconsole 2.0 Startup Process`

```
This script will guide you through the steps to configure
SGIconsole 2.0 for use.  This script should be run on a
system that has Red Hat Linux 8.0 and SGIconsole software
installed.

This script will perform the following steps:

 1) Define SGIconsole hostname.
 2) Enable connection to serial port.
 3) Configure eth1.
 4) Start httpd.
 5) Start VACM services.
 6) Create console user 'root'.
 7) Configure and upgrade EL-16 or EL-160 unit(s).
 8) Configure DHCP services for L2 Controller(s).
 9) Configure DHCP services for EL-16 or EL-160 unit(s).
10) Enable X11 Forwarding for ssh.
11) Improve system security.

Continue with the startup process? [y/n] y
```

Press Enter to be guided through the steps. The following list provides more
information on the choices to be made.

1. Define SGIconsole hostname.

   In order for SGIconsole software to communicate properly between the SGIconsole
   and the nodes you will be administering, you need to assign a hostname to the
   SGIconsole. For more information on hostnames, see the hostname(1) man page.
   This step places your input into the /etc/sysconfig/network file.

2. The startup script adds an entry to the /etc/inittab file to enable connection
   to a serial port on the SGIconsole server. The serial port speed default is 9600.
   The default terminal type for logging into SGI IRIX and Linux systems using
   SGIconsole is vt100.

3. Configure eth1.

   SGIconsole comes with two Ethernet interfaces on the motherboard. The
   configuration steps assume eth0 will be used for the public network, so you can
   access the SGIconsole from a remote system inside your firewall, and eth1 will
   be used for the private network, to connect the SGIconsole to the machines it

administers. This step places your input into the
`/etc/sysconfig/network-scripts/ifcfg-eth1` file.

You will be prompted to define the IP address for `eth1` , as well as the netmask,
broadcast address, and network address. In order to enable the included SGI
system controller software, SGI recommends that you use IP Address 10.1.1.1,
Netmask 255.0.0.0, Broadcast Address 10.255.255.255, and Network Address
10.0.0.0. These setting will enable the SGI system controller command
`/stand/sysco/bin/l2find` to locate new L2 controllers as they are added to
the `eth1` network and enable the `/stand/sysco/bin/l2term` command to
connect to new L2 controllers. For example, your entries might look like the
following:

```
eth1 IP Address (e.g. 130.23.65.10): 10.1.1.1
eth1 Netmask (default 255.255.255.0): 255.0.0.0
eth1 Broadcast Address (default 10.1.1.255): 10.255.255.255
eth1 Network Address (default 10.1.1.0): 10.0.0.0
```

The information for the `eth1` device is stored in the
`/etc/sysconfig/network-scripts/ifcfg-eth1` file, as follows:

```
DEVICE=eth1
BOOTPROTO=static
BROADCAST=10.255.255.255
IPADDR=10.1.1.1
NETMASK=255.0.0.0
NETWORK=10.0.0.0
ONBOOT=yes
```

The `SGIconsole_startup` script then brings up the `eth1` interface.

After bringing up the `eth1` device with these settings, you can use the System
Controller command `/stand/sysco/bin/l2find` to find new L2 controllers
when added to the `eth1` subnet.

4. Because the SGIconsole main interface and PCP interface are web-based, the
   script enables the web server (`httpd`) on the SGIconsole. (**No input is needed.**)

5. The startup script starts the `vacm` and `vacm-mode` services. (**No input is needed.**)

6. To enable SGIconsole software to function properly, the startup script creates a
   console user `root` password file. (**No input is needed.**)

7. Configure EL-16 or EL-160 units

If you manage a server that requires serial console access using EtherLite serial port server devices, the firmware for these devices must be upgraded to RealPort for use with SGIconsole. In order to do this, DHCP and BOOTP are used to perform the upgrade.

Choose **y** if you have a server that you want to manage using Etherlite serial port server devices.

The SGIconsole_startup script builds and installs the Digi RealPort software.

Note: If the build/install operation fails, the system might not have been installed properly. Use the provided kickstart floppy image to clean install the system with required rpms as decribed in "Installing Red Hat Linux 8.0 or 9.0 Release", page 21.

This step is to set up the SGIconsole system to upgrade the firmware of the EtherLite units and to configure the upgraded EtherLite units for use with DHCP. If you skip this step, you will have to store an IP address in the unit, and it is assumed that the unit has already been upgraded to RealPort.

Chose **y** to configure and upgrade your EtherLite devices.

Choose **y** to add more units.

Note: The 2-character unit ID below is used by the Digi RealPort driver to identify the device in the /etc/dgrp.backing.store configuration files and the files in the/proc/dgrp dirctory. The TTY devices created for each Etherlite also contain the unit ID. For instance, entering a unit ID of "aa" will mean the Etherlite device identity will be "aa" and its TTY devices will be ttyaa00 through ttyaa15. For more information, see the dgrp_cfg_node(8) man page.

The following is an example of upgrading firmware and configuring two Digi EL-16 serial port servers as prompted by the SGIconsole_startup script:

```
Please enter: 2-character unit ID: N0
             IP address: 192.12.1.20
             EL-x unit type [16,160]: 16

Add another unit definition or press the Enter key to continue.

Please enter: 2-character unit ID: N1
```

```
          IP address: 192.12.1.21
          EL-x unit type [16,160]: 16

Add another unit definition or press the Enter key to continue.

Please enter: 2-character unit ID:

Using /usr/bin/dgrp/dgrp.o
Chkconfig dgrp_daemon on...

You will be prompted for information regarding the network in
which DHCP needs to provide services to.
Press the Enter key to use the default value.

Subnet Address (default 10.0.0.0):
Netmask (default 255.0.0.0):
Broadcast Address (default 10.255.255.255):

For the EtherLite unit with IP address 192.12.1.20, please specify:
Hostname: el-16
MAC Address (e.g. 00:a0:e7:aa:11:bb): 00:a0:e7:21:88:f9

Adding host to /etc/hosts file...

Adding 192.12.1.20 to routing table...

For the EtherLite unit with IP address 192.12.1.21, please specify:
Hostname: el-16-2
MAC Address (e.g. 00:a0:e7:aa:11:bb): 00:a0:e7:21:c7:e3

Adding host to /etc/hosts file...

Adding 192.12.1.21 to routing table...

The /etc/dhcpd.conf file is created.

Restarting xinetd and dhcpd...
Stopping xinetd: [  OK  ]
Starting xinetd: [  OK  ]
Chkconfig dhcpd on...
```

```
Starting dhcpd services on eth1...

Shutting down dhcpd: [FAILED]
Starting dhcpd: [  OK  ]
Upgrading firmware to any EtherLite units that are restarting...

IMPORTANT:
==========
If your EtherLite units do not have RealPort firmware installed,
now is the time to install it!  It is required that all EtherLite
Serial Port Server devices be upgraded to use RealPort firmware, since
SGIconsole uses RealPort drivers which are incompatible with older
EtherLite firmware.

To perform an upgrade to any EtherLite units you plan to use with
SGIconsole, you MUST connect them to a network via /dev/eth1 and
power cycle the units NOW to update their firmware.  Only EtherLite
units which are restarted will have their firmware overwritten.

It is suggested that you remove power from the EtherLite unit by
unplugging the power cord, waiting 10 seconds, and then re-applying
power to the unit.  The EtherLite unit will then reinitialize itself,
and the LEDs will flicker quickly while the firmware upgrade progresses.

*** DO NOT DISCONNECT POWER TO AN ETHERLITE UNIT WHILE A FIRMWARE
    UPGRADE IS IN PROGRESS OR THE UNIT WILL BE DAMAGED.

Wait a few seconds until the LEDs on the EtherLite unit stop flashing
(the LEDs should remain lit).  After you have power-cycled the
EtherLite devices you want upgraded, press the Enter key to continue...

Restarting xinetd again and shutting down dhcp...

Stopping xinetd: [  OK  ]
Starting xinetd: [  OK  ]
Starting dgrp_daemon...

Starting DGRP daemons:
        Daemon for id "N0" (192.12.1.20): started.
        Daemon for id "N1" (192.12.1.21): started.
```

```
----
Note: The tty devices for example unit with id "N0" are ttyN000 to ttyN015.
The tty devices for example unit with id "N1" are ttyN100 to ttyN115.
```

8. Configure DHCP service for L2.

   If you have an SGI Origin 3000 series server, an SGI Altix 3000 server or supercluster, or an SGI Onyx 3000 graphics system, you will need an L2 system controller to administer it using SGIconsole. This step sets up one or more L2 system controllers for use with SGIconsole, placing your input into the `/etc/dhcpd.conf` and the `/etc/hosts` files, and into the routing table. For more information on `dhcpd` and `route`, see the `dhcpd`(8) and `route`(1M) man pages.

   You will be prompted to enter for each L2 system controller a hostname, Ethernet (MAC) address, and fixed IP address. To determine the hardware address of the L2 system controller, see "Determining the Hardware Address of the L2 System Controller", page 44.

9. Configure DHCP for EL-16 or EL-160 units.

   If you have an SGI Origin 200 server, an SGI Origin 2000 series server, an SGI Origin 300 server, or SGI Altix 3000 server or supercluster, or SGI Origin 3000 series server, or a Silicon Graphics Onyx 300 or Onyx 3000 graphics system, you will need a Silicon Graphics Ethernet serial port server (EL-16 or EL-160) to administer it using SGIconsole. This step sets up one or more Silicon Graphics Ethernet serial port servers for use with SGIconsole, placing your input into the `/etc/dhcpd.conf` and `/etc/hosts` files, and into the routing table. For more information on `dhcpd` and `route`, see the `dhcpd`(8) and `route`(1M) man pages.

   You will be prompted to enter for each Silicon Graphics Ethernet serial port server a hostname, Ethernet (MAC) address, and fixed IP address.

   Note: At this point, the script will start up DHCP services on the private network `eth1`.

   The following information describes the SGIconsole as a DHCP server with one or more L2 system controllers, SGIconsole as a DHCP server with a Silicon Graphics Ethernet serial port server (EL-16 or EL-160), or SGIconsole as a DHCP server with both L2 system controllers and a Silicon Graphics Ethernet serial port server.

   • Configure SGIconsole as a DHCP server.

This step places your input into the `/etc/dhcpd.conf` file, which the startup script will create for you, and creates the `/var/state/dhcp/dhcpd.leases` file. For more information on `dhcpd`, see the `dhcpd(8)` man page.

DHCP can enable SGIconsole to be more flexible in the event of a power cycle, because the Silicon Graphics Ethernet serial port server (EL-16) will be able to reacquire its IP address from the SGIconsole. Alternately, using a static IP can allow SGIconsole to be more secure for those environments concerned about security. The startup script assumes you want to use DHCP; if you prefer to use a static IP, please follow the instructions in the `README.txt` file.

You will be prompted to enter the SGIconsole subnet address, netmask, broadcast address, and default lease time.

- See steps 7 and 8

10. Enable X11 Forwarding for `ssh`

    The `ssh` (SSH client) is a program for logging into a remote machine and for executing commands on a remote machine. It replaces `rlogin` and `rsh` and provides secure encrypted communications between two untrusted hosts over an insecure network. X11 connections and arbitrary TCP/IP ports can also be forwarded over the secure channel.

11. Improve system security.

    SGIconsole 2.0 startup script helps you improve security on your SGIconsole system. It disable services via `chkconfig(8)` command. These actions address common concerns but are not intended to eliminate all security risks. The SGIconsole system and the machine to which it displays windows, should be located behind a secure firewall.

12. Update SGIconsole group database (if it exists). (**No input is needed.**)

    This step performs a maintenance upgrade on the groups database of older SGIconsole (1.x) installations.

13. Install periodic tasks. (**No input is needed.**)

    This step installs `cron(1)` tasks for root in relation to console logging cleanup and rotation.

When the script has completed successfully, ensure that the host where applications will be displayed has access control disabled. You may have to modify the proxy

settings of your Web browser to access the Internet. After running the SGIconsole 2.0 startup script, the only connection methods enabled are ssh(1) and telnet(1).

At this point SGIconsole software should be configured and ready to use (refer to "Using SGIconsole").

Restoring SGIconsole 1.1 Data

At this point you should have used a kickstart image to install the Red Hat 8 or Red Hat 9 release and configured the system using netconfig, authconfig, and so on as prompted. Run through SGIconsole_startup script making sure to setup the SGI 1100 server as the dhcp-server on the eth1 subnet, build and install the Digi realport driver, upgrade the Digi EL-16 devices to realport firmware, and configure and start the realport driver, dgrp_daemon for each Digi EL-16.

Procedure 3-9 Restoring SGIconsole 1.1 Data

To restore the SGIconsole 1.1 data, perform the following steps:

1. Insert the floppy with the SGIconsole 1.1 backup data and issue the mount command, as follows:

   ```
   [root@linux3 sysadm]# mount /dev/fd0
   ```

2. Add the console group to the /etc/group file and ensure that the group ID is 60000, as follows:

   Note: The group ID changed from 31 in SGIconsole 1.1 to 60000 in SGIconsole 2.0.

   ```
   [root@linux3 sysadm]# cp /etc/group /etc/group.O

   [root@linux3 sysadm]# echo "console:x:60000:" >> /etc/group
   ```

3. Restore the sysadm privileged user file, as follows:

```
[root@linux3 sysadm]# cp /var/lib/sysadm/privilegedUsers /var/lib/sysadm/privilegedUsers.O
[root@linux3 sysadm]# cp /mnt/floppy/privilegedUsers /var/lib/sysadm/privilegedUsers
```

4. Restore VACM configuration file, as follows:

```
[root@linux3 sysadm]# cp /usr/lib/vacm/vacm_configuration /usr/lib/vacm/config.O

[root@linux3 sysadm]# cp /mnt/floppy/vacm_configuration /usr/lib/vacm/vacm_configuration
```

5. Restore the SGIconsole data directory, as follows:

```
[root@linux3 sysadm]# cp -R /var/lib/SGIconsole /var/lib/SGIconsole.O

[root@linux3 sysadm]# cp -R /mnt/floppy/SGIconsole/ /var/lib
```

If the /etc/sgiconsole.conf file exists and it contains the following line, comment out or remove the line and save the changes back to the sgiconsole.conf file:

```
nogroupdbfix
```

Restart the SGIconsole software by executing as root:

```
[root@linux3 sysadm]# /etc/init.d/sgiconsole restart
```

Note: Commenting out the nogroupdbfix directive in the /etc/sgiconsole.conf file enables SGIconsole to rescan the groups database at /var/lib/SGIconsole/groups and apply the necessary fixes to the database for SGIconsole 2.0 when SGIconsole is restarted, either by the method above or by using the **Reset SGIconsole Software** command in Console Manager.

The /etc/sgiconsole.conf file will be edited or recreated to restore the nogroupdbfix directive after the scan has been applied to the groups database.

6. Restore user data and create a user for each user that was local to the system (except root), as follows:

   a. Compare the users listed in the restored SGIconsole directory with the contents of the saved passwd file from SGIconsole 1.1. Then add the information of local users to the system passwd file (with new console group ID 60000).

   b. List the users, as follows:

   ```
   [root@linux3 sysadm]# ls /var/lib/SGIconsole/users
   nisuser   root   testuser
   ```

   c. Save copy of the current system passwd file, as follows:

   ```
   root@linux3 sysadm]# cp /etc/passwd /etc/passwd.O
   ```

   d. Check for each user except root in the saved passwd file.

NIS users do **not** appear in the passwd file. If you check for a NIS user, as in the following example, nothing is returned:

```
[root@linux3 sysadm]# cat /mnt/floppy/passwd | grep nisuser
```

An example of local user in saved passwd file is, as follows:

```
[root@linux3 backup]# cat /mnt/floppy/passwd | grep testuser
testuser:x:54580:31::/home/testuser:/bin/bash
```

    e. Add the local user to passwd file with new group ID 60000, as follows:

```
[root@linux3 backup]# echo "testuser:x:54580:60000::/home/testuser:
/bin/bash" >> /etc/passwd
```

Repeat the checks and add steps for remaining users.

    f. If shadow password file was saved from SGIconsole 1.1, you must also check and add user information from the saved shadow password file. You can save a copy of current shadow password file, as follows:

```
[root@linux3 backup]# cp /etc/shadow /etc/shadow.O
```

    g. Check for each user except root in the saved shadow password file, as follows:

```
[root@linux3 backup]# cat /mnt/floppy/shadow | grep testuser
testuser:xWMVKkegTeXxg:12209:0:99999:7:::
```

    h. Add user data to the shadow password file of the current system, as follows:

        i.

```
[root@linux3 backup]# echo "testuser:xWMVKkegTeXxg:12209:0:99999:7:::"
 >> /etc/shadow
```

        ii. Create a home directory for each local user, as follows:

```
[root@linux3 backup]# mkdir /home/testuser
```

        iii. Copy default files, as follows:

```
[root@linux3 backup]# cp /etc/skel/.* /home/testuser
```

iv. Create `.telnetrc` file in the home directory each user. Open file in an editor, as follows:

`[root@linux3 backup]# `**`vi /home/testuser/.telnetrc`**

Cut and paste the following contents into the file:

```
# automatically generated by SGIconsole
# do not edit
localhost
        set crlf off
        mode character
```

v. Open the `.bash_profile` file of each user and add content to launch SGIconsole texted-based interface `tscm` on user login, as follows:

`[root@linux3 backup]# `**`vi /home/testuser/.bash_profile`**

Cut and paste the following contents to the end of the file:

```
#  Automatically run the text-based interface to SGIconsole
if [ -x /usr/bin/tscm ]
then
    echo ""
    echo "Automatically starting SGIconsole (to get to a shell,"
    echo "enter 6 at the command line prompt)."
    sleep 5
    clear
    /usr/bin/tscm
    exit
fi
# (... end support for text-based interface to SGIconsole)
```

vi. Change ownership and mode of user files, as follows:

```
[root@linux3 backup]# chown -R testuser:console /home/testuser
[root@linux3 backup]# chmod 700 /home/testuser
```

7. Perform the following steps to map TTY device names from Digi Etherlite to RealPort driver:

a. SGIconsole 1.1 supported up to two Digi EL-16 or EL-160 Etherlite serial port servers. The TTY device names created and used by the Digi driver have changed. Node data for systems with serial port connections must be updated with the new TTY device names.

Note: The Digi RealPort driver should have been built and installed and the firmware of the Etherlite devices upgraded in step 7 of the SGIconsole_startup script described in Procedure 3-8, page 31. Further information on upgrading the firmware is available in "Replacing EtherLite Firmware with Realport Firmware".

Use the cat(1) command to compare the saved Digi Etherlite driver configuration data with the Digi RealPort configuration data.

An example of saved Digi Etherlite driver configuration is, as follows:

```
[root@linux3 /root]# cat /mnt/floppy/els.conf
#elsnn  EL-type IP-address options( e.g. -t 600)
els0 EL-16 192.12.1.20 -t=120
els1 EL-16 192.12.1.21 -t=120
```

An example of Digi RealPort driver configuration data, is as follows:

```
[root@linux3 /root]# cat /etc/dgrp.backing.store
# Format:
#
#   ID  IP  PortCount  SpeedString  IPPort Mode Owner Group
#
# If any of the last five options should use the default, the
# string "default" appears instead.
#

N0 192.12.1.20 16 auto default default default default
N1 192.12.1.21 16 auto default default default default
```

The following table maps the TTY device names for the unit named els0 in the els.conf file and N0 in the dgrp.backing.store file with the common address 192.12.1.20.

Note: The RealPort TTY device names contain the unit ID. In this example, the RealPort unit ID is N0. The corresponding TTY device names are TTY N0 00 to TTY N0 15. The device names might be different for your configuration based on the unit IDs you see in your dgrp.backing.store file.)

Devices are `/dev/tty****`

```
els0:N000,N001,N002,N003,N004,N005,N006,N007,N008,N009,N00a,N00b,N00c,N00d,N00e,N00f
N0:  N000,N001,N002,N003,N004,N005,N006,N007,N008,N009,N010,N011,N012,N013,N014,N015
```

The following table maps the TTY device names for the unit named `els1` in the `els.conf` file and `N1` in the `dgrp.backing.store` file with the common address 192.12.1.21, as follows:

```
els1:N010,N011,N012,N013,N014,N015,N016,N017,N018,N019,N01a,N01b,N01c,N01d,N01e,N01f
N1:  N100,N101,N102,N103,N104,N105,N106,N107,N108,N109,N110,N111,N112,N113,N114,N115
```

b. Launch the Console Manager application and login as the root user.

c. Select each serial attached node in the Nodes **View** and launch the **Modify a Node Configuration** task from the **Node Tasks** pull-down menu.

d. Change the TTY device name(s) for the node from the Etherlite TTY device name to the RealPort TTY device name.

For a simple script to run on the floppy to restore the user, VACM, and system administration data after running the `SGIconsole_startup` script on a clean installed RedHat 8 or 9 system, see "Restoring SGIconsole 1.1 Data Script", page 53.

Determining the Hardware Address of the L2 System Controller

This section describes how the L2 system controllers come online after a system boots and how to set the `eth1` port on the SGI 1100 server to match when a DHCPD server is running on a subnet.

Procedure 3-10 Determining the Hardware Address of the L2 System Controller

1. SGI systems with L2 system controllers should be connected to the second Ethernet port (`eth1`) on the SGIconsole system. If connected directly it should be connected via a crossover cable. To ensure the L2 system controller is correctly installed, see the *SGIconsole Hardware Connectivity Guide*.

   The SGIconsole system should be running the DHCP server for the `eth1` subnet. A DHCPREQUEST message for the L2 with its current IP address and media access control (MAC) address should appear in the `/var/log/messages` system log on the SGIconsole system. However, SGIconsole will not serve an address to the request by default.

Warning: If the L2 controller fails to recieve an IP address from a DHCP request, it will start a dhcp server by default and give itself an address. This dhcp server will compete with the server running on the SGIconsole system and it can consequently serve an unknown address to other L2 controllers and Digi Etherlite units on the same subnet. A new L2 controller installed on the eth1 subnet should not be left unconfigured in /etc/dhcpd.conf file on the SGIconsole system.

The L2 system controller will broadcast a request for an IP address on power up.

a. Before connecting a new L2 controller to the private subnet off eth1 on the SGIconsole system open a shell and tail the system log, as follows:

```
tail -f /var/log/messages
```

b. Patch the L2 controller to the private subnet and power cycle it.

c. Create a host entry in the /etc/dhcpd.conf file for the L2 controller using the MAC address from the messages log. For example,

```
 # Device information
host dino-l2 {
    hardware ethernet 08:00:69:11:81:18;
    fixed-address 192.12.1.10;
}
```

d. Restart the dhcpd(8) daemon, as follows:

```
# /etc/rc.d/init.d/dhcpd stop
```

```
# /etc/rc.d/init.d/dhcpd start
```

e. Add an entry for the L2controller in the /etc/hosts file, as follows:

```
# echo "192.12.1.10  dino-l2" >> /etc/hosts
```

f. Add a route to the L2 controller, as follows:

```
# route add 192.12.1.10 eth1
```

g. Power cycle the L2 controller and watch the system log (`/var/log/messages`) for a `dhcp` message confirming the L2 controller has loaded the new address

h. Use the `telnet` command to connect to the L2 controller and disable the `dhcpserver`, as follows:

```
root@linux2 init.d]# telnet dino-l2
Trying 192.12.1.10...
Connected to dino-l2.
Escape character is '^]'.

Linux 2.4.7-sgil2 (192.12.1.10) (ttyp0)


SGI SN1 L2 Controller

INFO: connection established to localhost, to quit enter
dino-001-L2>dhcpserver disable
DHCP server startup DISABLED (this L2 will never start a DHCP server).
```

2. The SGI system controller `l2find` command can be used to find L2 controllers when troubleshooting your system. The `eth1` interface on the SGIconsole system needs the following settings in `/etc/sysconfig/network-scripts/ifcfg-eth1` file to enable it:

```
DEVICE=eth1
BOOTPROTO=static
BROADCAST=10.255.255.255
IPADDR=10.2.2.1
NETMASK=255.0.0.0
NETWORK=10.0.0.0
ONBOOT=yes
```

3. Reboot the SGI 1100 server or stop and start your network using the following commands:

```
[root@console-dino /root] # /etc/rc.d/init.d/network stop
```

and

```
[root@console-dino /root] # /etc/rc.d/init.d/network start
```

4. To find the IP address of the L2 system controller, perform the following:

```
[root@console-dino /root]# /stand/sysco/bin/l2find eth1
```

Output similar to the following appears:

```
1 L2's discovered:

        IP              SSN      NAME             RACK FIRMWARE
        --------------- -------- ---------------- ---- ------------
        10.17.177.24                              000 1.2.0
```

5. Use the l2term command to connect to the L2 controller and find the MAC address needed for dhcpd.conf file and the SGIconsole_startup script, as follows:

```
[root@console-dino /etc]# /stand/sysco/bin/l2term --l2 10.17.177.24
```

Output similar to the following appears:

```
INFO: connection established to 10.17.177.24, to quit enter
    10.17.177.24-L2>
    10.17.177.24-L2>! ifconfig
    eth0    Link encap:Ethernet  HWaddr 08:00:69:11:B1:18 <---needed
    by SGIconsole_startup for /etc/dhcpd.conf.

            inet addr:10.17.177.24  Bcast:10.255.255.255  Mask:255.0.0.0
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
            RX packets:98 errors:0 dropped:0 overruns:0 frame:0
            TX packets:56 errors:56 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:100
            Base address:0xe00

    lo      Link encap:Local Loopback
            inet addr:127.0.0.1  Mask:255.0.0.0
            UP LOOPBACK RUNNING  MTU:3924  Metric:1
            RX packets:63 errors:0 dropped:0 overruns:0 frame:0
            TX packets:63 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:0

    10.17.177.24-L2>
```

6. Use the hardware address (HWaddr 08:00:69:11:B1:18) in the dhcpd.conf file and the SGIconsole_startup script.

7. Once DHCP is configured and restarted or after the `SGIconsole_startup` script has completed, the L2 system controllers need to be power cycled so they pick up their new addresses from the SGI 1100 server.

Using SGIconsole

The main SGIconsole window provides access to the ConsoleManager and PCP tools, and to documentation about these and other SGIconsole components.

To start using SGIconsole, enter the following URL into a Web browser on a local or remote machine to bring up the SGIconsole main Web page. Replace *SGIconsole-hostname* with the name of your SGIconsole host:

`http://`*SGIconsole-hostname*

The SGIconsole main window is shown in Figure 3-6.
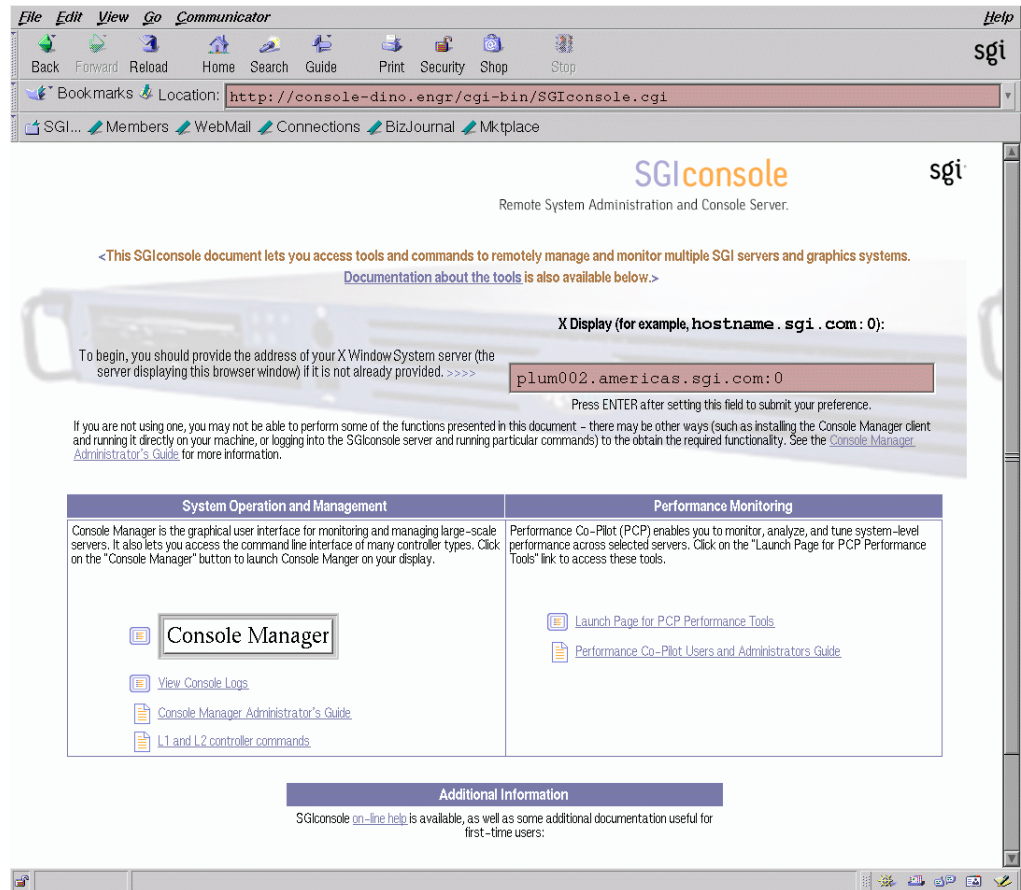
Figure 3-6 SGIconsole Main Window

To activate a specific tool or command, click on the specific link or button. To access documentation, click on the specific title.

If there is no response to clicking on a link, check the following items:

• The access control of the display host may be disallowing application windows to display on your machine. To allow any host to display windows on your machine, enter the following command:

```
xhost +
```

To allow only the host that you specify to display windows on your machine, enter the following command:

xhost + *hostname*

- Your Web browser proxy setting may not be updated to access the Internet. Check your browser's proxy settings.

- You may not have set the "Name of host where tools will display" entry field to your local host. Check the entry field and ensure that the host name is correct.

- You may have iconified the browser or the application window from a previous access. Restore the browser or window to its normal size.

Changing the Appearance of your X terminal

X terminal windows are provided for the system console. You can change the appearance as follows:

- You can change it on the fly by **<ctrl> <right mouse>** to get the font-size menu.

- You can change it globally with X resources. Add the following to the ~/.Xresources file:

```
XTerm*font:
-*-lucidatypewriter-medium-r-normal-*-10-*-100-100-*-*-*-*
```

- In other applications, where you can invoke xterm with the -name *name* option, you can specify it as follows:

```
remxterm*font:
-*-lucidatypewriter-medium-r-normal-*-10-*-100-100-*-*-iso8859-1
```

and then start the Xterminal as xterm -name *remxterm*.

Setting up and Using the Console Manager Client on Client Machines

This section describes the procedures for installing software to allow you to use Console Manager directly on your client machine.

1. Check that you have Java2 installed on your machine.

For IRIX users, use the showprods(1) command to check that you have Java 2 installed as follows:

% **showprods java2***

Output similar to the following appears:

```
I = Installed, R = Removed

   Name                 Date        Description

I  java2_eoe            05/13/2003  Java2 v1.4.1 Execution Environment (Sun JRE v1.4.1)
I  java2_eoe.man        05/13/2003  Java Runtime System Documentation
I  java2_eoe.man.base   05/13/2003  Java Runtime System Man Pages
I  java2_eoe.man.relnotes  05/13/2003  Java Runtime System Release Notes
I  java2_eoe.man.webdocs  05/13/2003  Java Documentation (HTML)
I  java2_eoe.sw         05/13/2003  Java Runtime System Software
I  java2_eoe.sw.base    05/13/2003  Java Runtime System Software (Required)
I  java2_eoe.sw32       05/13/2003  Java n32 Runtime System Software
I  java2_eoe.sw32.binaries  05/13/2003  Java n32 Runtime Software (Required)
```

For Red Hat Linux 8.0 or 9.0 users, check that you have Sun's Java2 runtime installed as follows:

[root@linux1 root]# **rpm -qa | grep j2re**

Output similar to the following appears:

```
j2re-1.4.1_02-fcs
```

For Windows 98, NT 4.0, NT 2000, and XP users, open the **Add/Remove Software** control panel and check if Java 2 Runtime Environment, SE v1.4.1_02 appears in the list of programs installed.

If you have the JDK installed instead of the JRE, this is also suitable for running Console Manager.

2. The required Java2 runtime environments are included on the SGIconsole CD at the following locations:

IRIX   images/ConsoleManager-Client/6.5_java2_eoe_1.4.1.tardist

Windows	`images/ConsoleManager-Client/j2re-1_4_1_02-windows-i586.exe`
Linux	`SGI/RPMS/j2re-1.4.1_02-fcs-linux.i586.rpm`

You can also make these Java2 runtime environment images available to users by creating a directory and copying them to that directory in the Apache webserver document root, as follows:

```
# mkdir /var/www/html/java2
```

```
# cp /mnt/cdrom/images/ConsoleManager-Client/6.5_java2_eoe_1.4.1.tardist /var/www/html/java2/
```

```
# cp /mnt/cdrom/images/ConsoleManager-Client/j2re-1_4_1_02-windows-i586.exe /var/www/html/java2/
```

```
# cp /mnt/cdrom/SGI/RPMS/j2re-1.4.1_02-fcs-linux.i586.rpm /var/www/html/java2
```

Users can then download and install these images from http://*hostname*/java2

For information on installing software packages on your Linux or IRIX system, see rpm(1) or inst(1), respectively. For Windows users, all that is required is to run the executable file and follow the on-screen instructions.

3. SGIconsole 2.0 client software can be downloaded from the main SGIconsole webpage under **System Operation and Management** menu.

   Download the software to a directory of your choice and uncompress the file using one of the following commands:

   - For IRIX, use `/usr/freeware/bin/unzip` from `http://freeware.sgi.com`

   - For Linux, use the unzip(1) command.

   - For Windows, Winzip is recommended from `http://www.winzip.com`

4. To run the client open the directory where the files were uncompressed to.

5. For IRIX and Linux systems, run the following command:

   ```
   % ./cmgr
   ```

   For Windows systems, run batch file `CMGR`.

Additional Miscellaneous Information about SGIconsole 2.0 Release

Restoring SGIconsole 1.1 Data Script

This is a simple script to run on the floppy to restore the user, VACM, and system administration data after running the SGIconsole_startup script on a clean installed RedHat 8 or 9 system.

Note: This script does not remap the TTY devices from the old Etherlite naming scheme to the new Realport naming scheme.

```
#!/bin/sh
# Restore SGIconsole data from 1.1 backup.
# Create and execute this file on the floppy
# with the 1.1 data.
# cd /mnt/floppy
# ./thisscript.sh

if cat /etc/group | grep console >/dev/null 2>&1
then
  echo "console group exists"
  GUI=`cat /etc/group | grep console | cut -d':' -f3` >/dev/null 2>&1
  echo "Using group id $GUI"
else
  GUI=60000
  cp /etc/group /etc/group.O
  echo "console:x:60000:" >> /etc/group
fi
  cp /etc/passwd /etc/passwd.O
  cp /etc/shadow /etc/shadow.O
for user in `ls ./SGIconsole/users/`
do
  if cat /etc/passwd | grep $user  >/dev/null 2>&1
  then
    echo "$user exists in passwd file."
  else
    cat ./passwd | grep $user | sed -e "s/31/$GUI/g" >> /etc/passwd
```

```
    if cat /etc/shadow | grep $user >/dev/null 2>&1
    then
    echo "$user exists in shadow file."
    else
    cat ./shadow | grep $user >> /etc/shadow
    fi
    if cat ./passwd | grep $user >/dev/null 2>&1
    then
      mkdir /home/$user
      cp /etc/skel/.* /home/$user
      echo "# automatically generated by SGIconsole" >> /home/$user/.telnetrc
      echo "# do not edit" >> /home/$user/.telnetrc
      echo "localhost" >> /home/$user/.telnetrc
      echo "        set crlf off" >> /home/$user/.telnetrc
      echo "        mode character"  >> /home/$user/.telnetrc
      echo "#  Automatically run the text-based interface to SGIconsole" >> /home/$user/.bash_profile
      echo "if [ -x /usr/bin/tscm ]" >> /home/$user/.bash_profile
      echo "then" >> /home/$user/.bash_profile
      echo "    echo \"\"" >> /home/$user/.bash_profile
      echo "    echo \"Automatically starting SGIconsole (to get to a shell,\"" >> /home/$user/.bash_profile
      echo "    echo \"enter 6 at the command line prompt).\"" >> /home/$user/.bash_profile
      echo "    sleep 5" >> /home/$user/.bash_profile
      echo "    clear" >> /home/$user/.bash_profile
      echo "    /usr/bin/tscm" >> /home/$user/.bash_profile
      echo "    exit" >> /home/$user/.bash_profile
      echo "fi" >> /home/$user/.bash_profile
      echo "#  (... end support for text-based interface to SGIconsole)" >> /home/$user/.bash_profile
      chown -R $user:console /home/$user
      chmod 700 /home/$user
    else
       echo "$user not local"
    fi
  fi
done
/etc/rc.d/init.d/sgiconsole stop
/etc/rc.d/init.d/vacm stop
cp /var/lib/sysadm/privilegedUsers /var/lib/sysadm/privilegedUsers.O
cp ./privilegedUsers /var/lib/sysadm/privilegedUsers
cp -R /var/lib/SGIconsole /var/lib/SGIconsole.O
cp -R SGIconsole/ /var/lib
cp /usr/lib/vacm/vacm_configuration /usr/lib/vacm/config.O
```

```
cp ./vacm_configuration /usr/lib/vacm/vacm_configuration
 [ -f /etc/sgiconsole.conf ] && {
     cp /etc/sgiconsole.conf /etc/sgiconsole.conf.O
     sed -e 's/^nogroupdbfix/##nogroupdbfix/' /etc/sgiconsole.conf.O \
      >/etc/sgiconsole.conf
 }
/etc/rc.d/init.d/sgiconsole restart
```

Replacing EtherLite Firmware with Realport Firmware

SGIconsole uses Digi Realport firmware. You must download the correct Realport firmware from the console server which is the machine where you installed SGIconsole 2.0 to your multiplexer.

Procedure A-1 Replacing EtherLite Firmware with Realport Firmware

Perform the following steps:

1. Download the latest Digi RealPort firmware for EL-16 or EL-160 at this location, as follows:`http://support.digi.com/support/drivers/linux/index-stsels.html`

   An example filename for EL-16 is `8007008A.bin`.

2. Copy the firmware to `/tftpboot`.

3. Add entries to the `/etc/hosts` file for each device similar to the following example:

   ```
   192.12.1.20    el-16.engr.sgi.com    el-16
   192.12.1.21    el-16-2.engr.sgi.com    el-16-2
   ```

4. Add routes for each device using the `route`(8) command similar to the following:

   ```
   route add 192.12.1.20 eth1
   ```

   Use the `route` command to check your work, as follows:

```
[root@linux2 root]# route
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
el-16-2.engr.sg *               255.255.255.255 UH    0      0        0 eth1
el-16.engr.sgi. *               255.255.255.255 UH    0      0        0 eth1
```

```
dino-l2.engr.sg *              255.255.255.255 UH    0         0         0 eth1
192.12.1.40     *              255.255.255.255 UH    0         0         0 eth1
192.12.1.30     *              255.255.255.255 UH    0         0         0 eth1
130.62.33.0     *              255.255.255.0   U     0         0         0 eth0
192.12.1.0      *              255.255.255.0   U     0         0         0 eth1
169.254.0.0     *              255.255.0.0     U     0         0         0 eth1
127.0.0.0       *              255.0.0.0       U     0         0         0 lo
default         b43-11-hsrp-33. 0.0.0.0        UG    0         0         0 eth0
```

5. Edit the `/etc/dhcpd.conf` file and add an entry for the Digi device that includes hardware ethernet (MAC) address, fixed-address, and filename of the firmware.

An example `dhcpd.conf file` with two EL-16s defined is, as follows:

```
# Created by SGIconsole_startup. Do not remove this line.

 # Define subnet
 ddns-update-style ad-hoc;

 subnet 192.12.1.0 netmask 255.255.255.0 {
 }

 # Begin group options
 group {
     option subnet-mask 255.255.255.0;
     option broadcast-address 192.12.1.255;

     # Device information
     host el-16 {
         hardware ethernet 00:a0:e7:21:88:f9;
         fixed-address 192.12.1.20;
         filename "8007008A.bin";
     }
     # Device information
     host el-16-2 {
         hardware ethernet 00:a0:e7:21:c7:e3;
         fixed-address 192.12.1.21;
         filename "8007008A.bin";
     }
 }
 # End group options
```

6. Use the chkconfig(8) and set tftp to on.

7. Restart the xinetd(8) daemon, as follows:

    `[root@linux2 root]# `**`/etc/rc.d/init.d/xinetd restart`**

8. Start the dhcpd(8) daemon, as follows:

    `[root@linux2 root]# `**`chkconfig dhcpd on; /etc/rc.d/init.d/dhcpd start`**

9. Use the tail(1) command and watch for DHCP messages, as follows:

```
[root@linux2 root]# tail -f /var/log/messages
Jun 17 17:40:30 console-dino dhcpd: DHCPREQUEST for 192.12.1.20 from 00:a0:e7:21:88:f9 via eth1
Jun 17 17:40:30 console-dino dhcpd: DHCPACK on 192.12.1.20 to 00:a0:e7:21:88:f9 via eth1
Jun 17 17:41:24 console-dino dhcpd: DHCPREQUEST for 192.12.1.21 from 00:a0:e7:21:c7:e3 via eth1
Jun 17 17:41:24 console-dino dhcpd: DHCPACK on 192.12.1.21 to 00:a0:e7:21:c7:e3 via eth1
```

10. Power cycle each Digi device making sure to wait at least 10 seconds between power off and power on.

    Here is the information and warning from SGIconsole_startup script, as follows:

```
To perform an upgrade to any EtherLite units you plan to use with
SGIconsole, you MUST connect them to a network via /dev/eth1 and
power cycle the units NOW to update their firmware.  Only EtherLite
units which are restarted will have their firmware overwritten.

It is suggested that you remove power from the EtherLite unit by
unplugging the power cord, waiting 10 seconds, and then re-applying
power to the unit.  The EtherLite unit will then reinitialize itself,
and the LEDs will flicker quickly while the firmware upgrade progresses.

*** DO NOT DISCONNECT POWER TO AN ETHERLITE UNIT WHILE A FIRMWARE
    UPGRADE IS IN PROGRESS OR THE UNIT WILL BE DAMAGED.

Wait a few seconds until the LEDs on the EtherLite unit stop flashing
(the LEDs should remain lit).
```

11. Login to devices and verify the realport firmware is loaded, as follows:

```
[root@linux2 root]# rlogin el-16

EL-16 RealPort Server - US Patent No. 6,047,319
```

```
            _____+note: RealPort
? ver
Product:  EL-16
FW Ver:   V1.2  <--------Firmware version

Ethernet:  00:A0:E7:21:88:F9
IP:        192.12.1.20
GW IP:     0.0.0.0
SN Mask:   255.255.255.0
Lease:     0xA217
UpTime:    2435641 sec
Boot Host: 192.12.1.7
Bootfile:  8007008A.bin
ICMP error (303) getting Bootfile: destination unreachable
? exit
? rlogin: connection closed.
```

> If it is not updated, try power cycle again making sure to wait at least 10 seconds between power off and power on.

12. Use the chkconfig(8) and set tftp to off.

13. Restart the xinetd(8) daemon, as follows:

    `[root@linux2 root]# `**`/etc/rc.d/init.d/xinetd restart`**

Index