

# Preparing for a System Installation

007-3864-002

CRAY® SV1-1A 8- to 16-processor Systems

Last Modified: September 1998

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## Record of Revision

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### June 1998

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### September 1998

Revised to include a second PC-10 cabinet in minimum configurations.

## Overview

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This document provides information that helps management and site preparation personnel prepare suitable environments for 8- to 16-processor CRAY SV1-1A computer systems. It describes configurations, electrical requirements, power consumption, environmental requirements, and remote support equipment.

Silicon Graphics site planning representatives are available for consultation regarding site planning and preparation. You may contact site planning representatives by telephone from within the USA at 1 800 284 2729, extension 62820; at +1 715 726 2820; by fax at +1 715 726 2969; by e-mail at [site@cray.com](mailto:site@cray.com); or at <http://site.cray.com> on the Web. Contact your account manager to obtain configuration information for any CRAY SV1-1A system.

You will want to discuss site planning, preparation, and installation suggestions with your Silicon Graphics account manager.

Use the following steps as a guide to plan for your system installation:

1. Identify the space, power, and environmental requirements for the system.
2. Select a location for the system and identify any necessary modifications.
3. Prepare the site according to the guidelines in this publication. Table 6 is a checklist for this process.

## System Configurations

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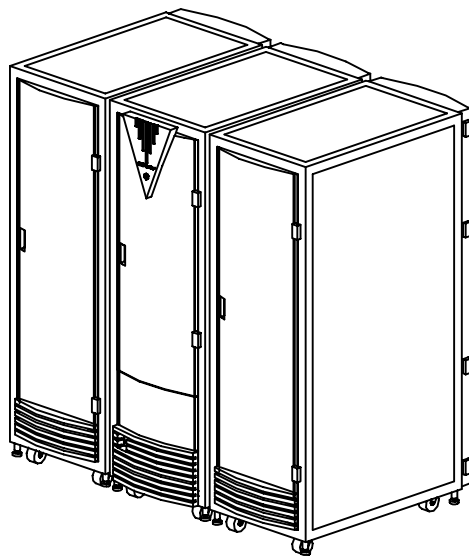
Each CRAY SV1-1A system consists of a variety of standard and optional equipment. The configuration of each computer system depends on customer requirements. The system is an air-cooled, multicabinet configuration. Each system has a minimum of three cabinets: a processing cabinet and two peripheral (PC-10) cabinets. The system can include one or two additional PC-10 cabinets (refer to Figure 1), for a maximum of four PC-10 cabinets per system. Silicon Graphics Engineering must approve requests for configurations that include more than three additional PC-10 cabinets.

The first two PC-10 cabinets must be physically joined to either side of the processing cabinet. Additional PC-10 cabinets may be aligned on either side of the processing cabinet, with at least 1.00 in. (25 mm) of clearance between PC-10 cabinets. The separation limits between PC-10 cabinets cannot exceed 23 ft (7 m). Refer to Figure 1 for the preferred system configurations.

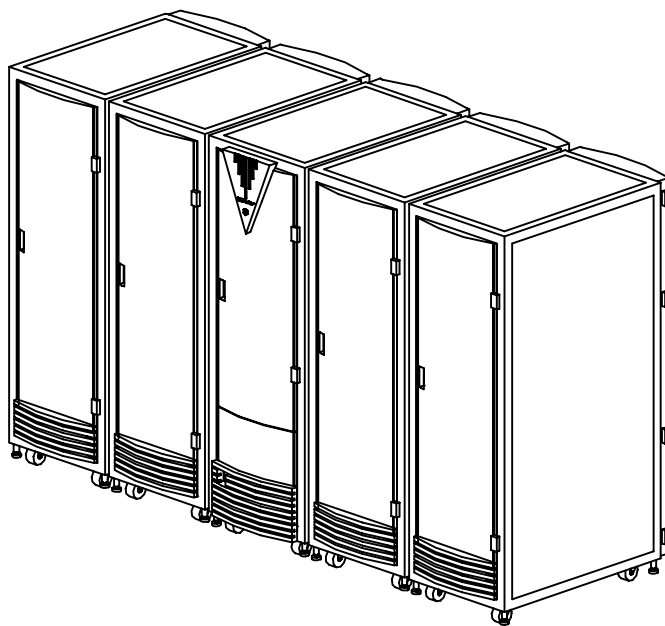
The computer system also includes a system workstation (SWS), which consists of a SPARCstation 5 workstation with a color monitor, digital audio tape (DAT) drive, keyboard, and mouse. The SWS provides monitoring, diagnosis, control, and configuration management of the CRAY SV1-1A computer systems. Refer to Figure 9 for an illustration of the SWS.

The processing cabinet contains the processor and memory modules, and the PC-10 cabinet contains the scalable I/O (SIO), disk, tape, and network node subsystem(s). The SIO comprises an input power subrack and various air-cooled subracks that provide input/output capabilities for the computer system. Examples of subracks include the node subrack (NSR-1), the multipurpose node (MPN-1) subrack, the disk subsystem fibre channel (DSF-1) subrack, the disk subsystem SCSI (DSS-1) subrack, and the fiber-optic extender (FOX-1) subrack. Each PC-10 cabinet contains SIO subrack connections for external network and peripheral attachments.

*Figure 1. Examples of System Cabinet Configurations*



Processing Cabinet  
and Two PC-10 Cabinets  
(Minimum Configuration)



Processing Cabinet  
and Four PC-10 Cabinets  
(Maximum Configuration)

## Site Requirements

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Use the following information to plan your access route and to meet the environmental and power requirements for your system.

### Planning Your Access Route

The standard dock height for freight trailers in the USA is 48.00 in. (1219 mm) from the ground. If your loading dock is 48.00 in. (1219 mm) from the ground, you may use a pallet jack to unload the system, in most cases. If not, you must provide a forklift or other means to unload the system. If you have concerns about your site access route, you may contact site planning representatives by telephone from within the USA at 1 800 284 2729, extension 62820; at +1 715 726 2820; by fax at +1 715 726 2969 or by e-mail at *site@cray.com*.

Refer to Figure 2 for an illustration of the system cabinet shipping crate and its dimensions. Each cabinet is shipped in a separate shipping crate. Silicon Graphics provides an attached ramp to facilitate system removal from the shipping crate. Refer to Figure 3 for an illustration of the documentation shipping crate and its dimensions. **You must provide a pallet jack to move each shipping crate to the system location.**

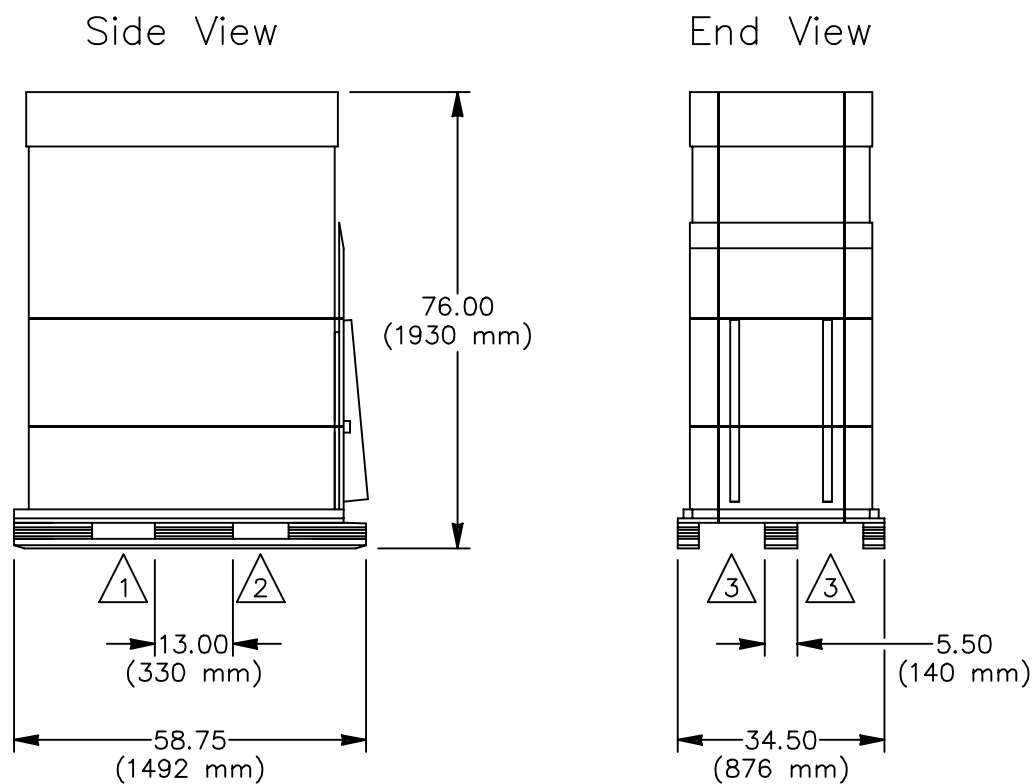
Silicon Graphics recommends that you leave each system cabinet in its shipping crate until it reaches its final destination. If the crate is too large for the planned access route, you may need to partially disassemble it.

The entire access route to your computer room should meet the following requirements:

- Height of the system in its shipping crate: 76.00 in. (1930 mm)
- Height of the system uncrated with panels: 70.20 in. (1783 mm)
- Width of the system in its shipping crate: 34.50 in. (876 mm)
- Width of the system uncrated with panels: 22.60 in. (574 mm)
- Floor loading: maximum weight per cabinet is 1,116 lbs (506 kg)
- Maximum incline: 10 degrees (height:length = 1:6)

Refer to “System Physical Specifications” for more information about the weight and dimensions of the system.

Figure 2. System Cabinet Shipping Crate

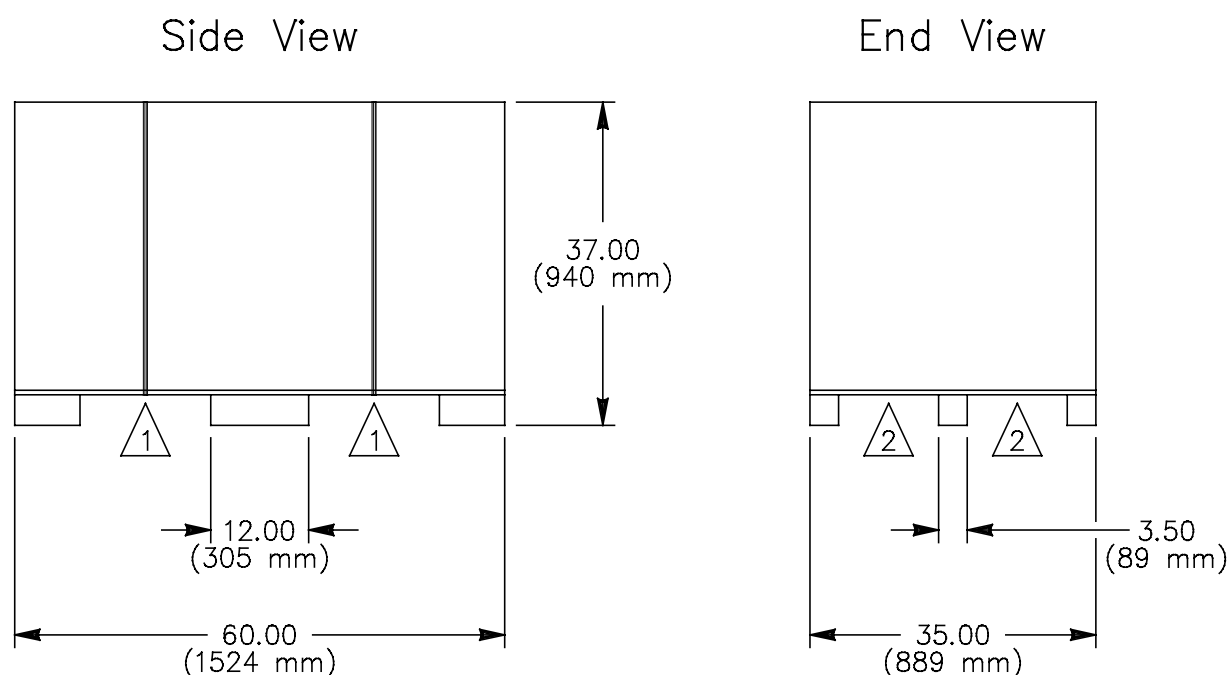


△1 Lift opening 10.50 x 2.75 (267 mm x 70 mm)

△2 Lift opening 9.25 x 2.75 (235 mm x 70 mm)

△3 Lift opening 11.00 x 4.25 (279 mm x 108 mm)

Figure 3. Documentation Shipping Crate



1 Lift opening 16.00 x 3.50 (406 mm x 89 mm)

2 Lift opening 12.25 x 3.50 (311 mm x 89 mm)

## Environmental Requirements

The design of your environmental control system (such as computer room air-conditioning units) must ensure that intake air to the system meets the requirements specified in this section. Each system cabinet receives intake air through the back of the cabinet and discharges heated air through the front of the cabinet. When you install the system, ensure that heated air from other equipment does not discharge toward the air intakes of the CRAY SV1-1A system cabinets. Overheating can occur if heated air discharges toward the back of the processing or PC-10 cabinet.

**Note:** If the system is significantly colder (a difference of 40 °F [22 °C] or more) than the environment in which you will install it, leave the system in its shipping crate (at its final destination) for 24 hours to prevent thermal shock and condensation.

Refer to Table 1 for the environmental requirements for the system.



Table 1. System Environmental Requirements

Characteristic	Specification
<b>Temperatures:</b>	
Operating <sup>a</sup>	55 to 85 °F (13 to 29 °C)
Temperature rate of change	Less than 10 °F (6 °C) per hour
Nonoperating	34 to 120 °F (1 to 49 °C)
Shipping	-40 to 140 °F (-40 to 60 °C)
Storage <sup>b</sup>	34 to 120 °F (1 to 49 °C)
<b>Relative Humidity:</b>	
Operating <sup>a</sup>	20% to 80% noncondensing
Nonoperating	20% to 80% noncondensing
Shipping	5% to 95% noncondensing
Storage <sup>b</sup>	10% to 80% noncondensing
<b>Altitude:</b>	
Operating	0 to 6,562 ft (0 to 2000 m)

<sup>a</sup> Silicon Graphics recommends an operating temperature of 72°F (22 °C) and a relative humidity of 50% noncondensing.

<sup>b</sup> Silicon Graphics assumes that the system is stored in its crate.

## Facility Power Requirements

Table 2 lists the electrical specifications for a single CRAY SV1-1A processing or PC-10 cabinet, a system workstation (SWS), a Microcom modem, and an optional Telebit NetBlazer dial-up router.

**Silicon Graphics recommends that all power circuits that supply power to the CRAY SV1-1A system originate from the same electrical distribution panel. Electrical work and installations must comply with all applicable local, state, and national electrical codes.**

Silicon Graphics makes every effort to minimize the effects of power failures and interruptions to the hardware. Studies indicate that computer systems that are subjected to repeated power interruptions and fluctuations experience higher component failure rates than systems with stable power sources. Silicon Graphics encourages you to install a stable power source, such as an uninterruptible power system (UPS), to reduce the possibility of component failures.

**Each CRAY SV1-1A processing cabinet and PC-10 cabinet requires its own customer-supplied circuit breaker and receptacle.**

- An International Electrotechnical Commission 309 (IEC 309) plug, supplied by Silicon Graphics, connects power to the system.
- If you have difficulty obtaining the proper receptacles, you may purchase them from Silicon Graphics (kit part number 90440700 for North America and Japan and part number 13127500 for other international sites).

**Each piece of support equipment requires its own customer-supplied receptacle(s).**

- The system workstation requires three customer-supplied receptacles.
- The Microcom modem requires one customer-supplied receptacle.
- The NetBlazer (optional) router requires one customer-supplied receptacle.

If you have difficulty obtaining these receptacles, please contact your Silicon Graphics account manager.

Table 2. Facility Power Requirements

Electrical Service	Specification
<b>A Processing Cabinet Requires:</b>	
Voltage	200 to 240 Vac, single phase <sup>a</sup>
Frequency	47 to 63 Hz
Circuit breaker	30 amp
Power consumption	Refer to Table 3 for a detailed worksheet.
Hold-up time	16 milliseconds at full load
Total harmonic distortion (THD)	Less than 9% at full load
Power cable	8-ft (2.4-m) pluggable drop cord
Receptacle: North America and Japan	Hubbell #330C6W or equivalent <sup>b</sup>
Receptacle: International	IEC309, single phase, 32 amp
<b>Each Peripheral (PC-10) Cabinet Requires:</b>	
Voltage	200 to 240 Vac, single phase <sup>a,c</sup>
Frequency	47 to 63 Hz
Circuit breaker	30 amp
Power consumption	Refer to Table 3 for a detailed worksheet.
Hold-up time	16 milliseconds at full load
Total harmonic distortion (THD)	Configuration dependent
Power cable	8-ft (2.4-m) pluggable drop cord
Receptacle: North America and Japan	Hubbell #330C6W or equivalent <sup>b</sup>
Receptacle: International	IEC309, single phase, 32 amp
<b>The System Workstation (SWS) Requires:</b>	
Voltage	100 to 120 Vac or 200 to 240 Vac, single phase
Frequency	50 or 60 Hz
Circuit breaker	15 amp
Power consumption	Refer to Table 3 for a detailed worksheet.
Power cable (3 supplied)	8-ft (2.4-m) pluggable drop cords
Receptacles: North America and Japan (3 required)	NEMA #5-15R or equivalent
Receptacles: International (3 required)	IEC309, single phase, 16 amp

Table 2. Facility Power Requirements (continued)

Electrical Service	Specification
<b>The Microcom Modem Requires:</b>	
Voltage: North America	100 to 120 Vac, single phase
Frequency	60 Hz
Circuit breaker	15 amp
Power consumption	Refer to Table 3 for a detailed worksheet.
Power cable	6-ft (1.8-m) pluggable drop cord
Receptacle: North America	NEMA #5-15R or equivalent
<b>The Optional NetBlazer Router Requires:</b>	
Voltage	100 to 120 Vac or 200 to 240 Vac, single phase
Frequency	50 or 60 Hz
Circuit breaker	15 amp
Power consumption	Refer to Table 3 for a detailed worksheet.
Power cable	8-ft (2.4-m) pluggable drop cord
Receptacle: North America and Japan	NEMA #5-15R or equivalent
Receptacle: International	IEC309, single phase, 16 amp

- <sup>a</sup> The system chassis have been tested for compliance with operation at +6% and -10% of the stated voltage for short periods of time.
- <sup>b</sup> A Hubbell #330C6W is an inline-type connector that requires an adapter to accept conduit. A Hubbell #330R6W receptacle with a back box may be substituted.
- <sup>c</sup> Customers may order a PC-10 cabinet that has a 3-phase power input; contact your Site Planning representative for differences in specifications.

Table 3 provides information for calculating the total electrical and air-conditioning requirements for the system. The amount of air conditioning required depends on the configuration of your system. After you determine your configuration, use Table 3 to calculate your total system power consumption in kilovoltamperes (kVAs) and the total air conditioning that the system requires in kilo British thermal units per hour (kBtu/hr).

**Note:** The maximum electrical and air-conditioning requirements for the processing cabinet and PC-10 cabinet are as follows:

**Electrical Requirements:**

CRAY SV1-1A 16-processor cabinet	2.54 kVA (2.41 kW)
PC-10 cabinet	5.26 kVA (5.00 kW)

**Air-conditioning Requirements:**

CRAY SV1-1A 16-processor cabinet	8.22 kBtu/hr
PC-10 cabinet	17.06 kBtu/hr

Table 3. Electrical and Air-conditioning Requirements Worksheet

Device	Quantity per System	Electrical		Air Conditioning	
		kVA per Unit	kVA Total	kBtu/hr per Unit	kBtu/hr Total
<b>Processing cabinet</b>	1	0.30	0.30	0.98	0.98
Processor modules (4 CPUs per module) (2 to 4 per system)		0.30		0.97	
Memory modules (4 required per system)	4	0.26	1.04	0.85	3.40
<b>PC-10 cabinets</b> (2 to 4 per system)		0.30		0.98	
NSR-1 (node subrack)		0.41		1.33	
IPN-1 (intelligent peripheral interface)		0.03		0.10	
BMN-1 (block MUX tape control node)		0.03		0.10	
HPN-1 (32-bit High Performance Parallel Interface)		0.03		0.10	
HPN-2 (32- or 64-bit High Performance Parallel Interface)		0.03		0.10	
FCN-1 (fibre channel I/O node)		0.03		0.10	
ESN-1 [Enterprise System Connection Architecture (ESCON) node]		0.03		0.10	
MPN-1 (multipurpose node)		0.18		0.58	
ETN-10 (Ethernet SBus controller)		0.03		0.10	
ETN-11 (Ethernet SBus controller)		0.03		0.10	
FDI-10 (Fiber distributed data interface)		0.03		0.10	
SCS-10 (SBus SCSI interface)		0.03		0.10	
ATM-10 (SBus asynchronous transfer mode interface)		0.03		0.10	
DSF-1 (fibre disk subrack)		0.16		0.51	
DD-308 (9.5-Gbyte fibre channel disk drive)		0.03		0.10	
DD-309 (20-Gbyte fibre channel disk drive)		0.03		0.10	
DSS-1 (SCSI disk subrack)		0.16		0.51	
DSS-2 (SCSI disk subrack)		0.16		0.51	
DD-318 (8-Gbyte DSS-1/2 drive)		0.03		0.10	
FOX-1 (fiber-optic extender subrack) (2 required per system)		0.09		0.31	
Micro Annex (Ethernet adapter box)		0.12		0.41	
NetBlazer router		0.10		0.31	

Table 3. Electrical and Air-conditioning Requirements Worksheet (continued)

Device	Quantity per System	Electrical		Air Conditioning	
		kVA per Unit	kVA Total	kBtu/hr per Unit	kBtu/hr Total
Microcom modem		0.01		0.03	
System workstation (SWS)		0.62		2.01	
			Total kVA		Total kBtu

## Remote Support

Remote Support is an optional maintenance feature for your system. Silicon Graphics support personnel use a modem as a data communication link to troubleshoot and maintain Silicon Graphics computer systems (refer to Table 4 for the physical specifications of the modem).

If site security regulations permit the use of a modem, contact the local telephone company well in advance of system delivery to arrange for installation of the appropriate telephone line. In the United States of America and Canada, you should install a public-switched dedicated data telephone line, such as a telephone, X.25 pad, or ISDN terminal adapter. Silicon Graphics recommends that you install another telephone near the system for general use. For system installations outside the USA and Canada, please contact your account manager for the modem type and telephone line requirements.

If you order the optional Telebit NetBlazer router, your local service representative completes a network request form prior to shipment of your system (refer to Table 4 for the physical specifications of the router). A Remote Support network administrator can then assign a registered Internet address. Remote Support administrators and Silicon Graphics Service personnel install and configure the appropriate software on the Telebit NetBlazer dial-up router.

## Network Connections

Each CRAY SV1-1A system requires two types of Ethernet network connections: one for Silicon Graphics maintenance purposes and one for customer use. You must place the system workstation (SWS) within 45 ft (13.7 m) of the processing and PC-10 cabinets if you use the standard 50-ft (15.2-m) Ethernet cable that Silicon Graphics supplies. Contact your Silicon Graphics account manager if you require a cable longer than 50 ft (15.2 m). Longer cables are available in 100-ft (30.4-m), 150-ft (45.6-m), and 200-ft (60.8-m) lengths. An Annex box is required for cables that exceed 50 ft (15.2 m).

The Silicon Graphics maintenance Ethernet network (Figure 4 and Figure 5) connects to the PC-10 cabinet in one of two ways. If the PC-10 cabinet includes the optional Ethernet concentrator, then the maintenance network connects from the SWS to the concentrator. If the PC-10 cabinet does not contain the optional Ethernet concentrator, then the SBus card in the SWS connects to the MPN-1 in the PC-10 cabinet. This Ethernet network is to be used for service only (to boot, dump, halt, diagnose, or monitor the CRAY SV1-1A system). The system may operate unpredictably if this Ethernet network is connected to the customer Ethernet network. Silicon Graphics ships at least one 12-port, twisted-pair Ethernet concentrator with each CRAY SV1-1A system.

The customer Ethernet network may be connected to a micro-D connector on the SWS. This connection requires an adapter cable (Sun Microsystems, Inc. part number X981A or Silicon Graphics part number 90395800) between the customer network and the AUI connector on the system workstation. Silicon Graphics ships this cable with the system. You may need to provide an Ethernet transceiver to match your network hardware protocol to the system. The transceiver must support IEEE 802.3 and Ethernet version 2.0 specification and use the signal quality error (SQE) heartbeat feature.



Figure 4. Network Connections, Modem-only Configuration

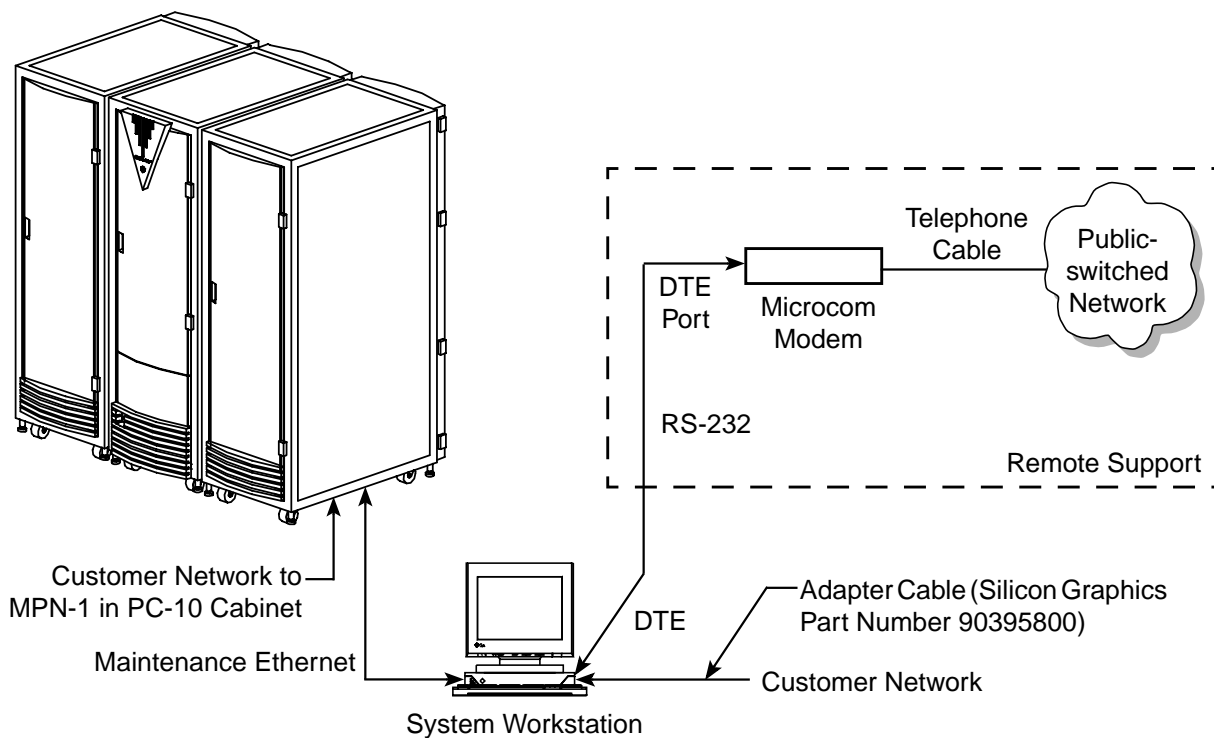
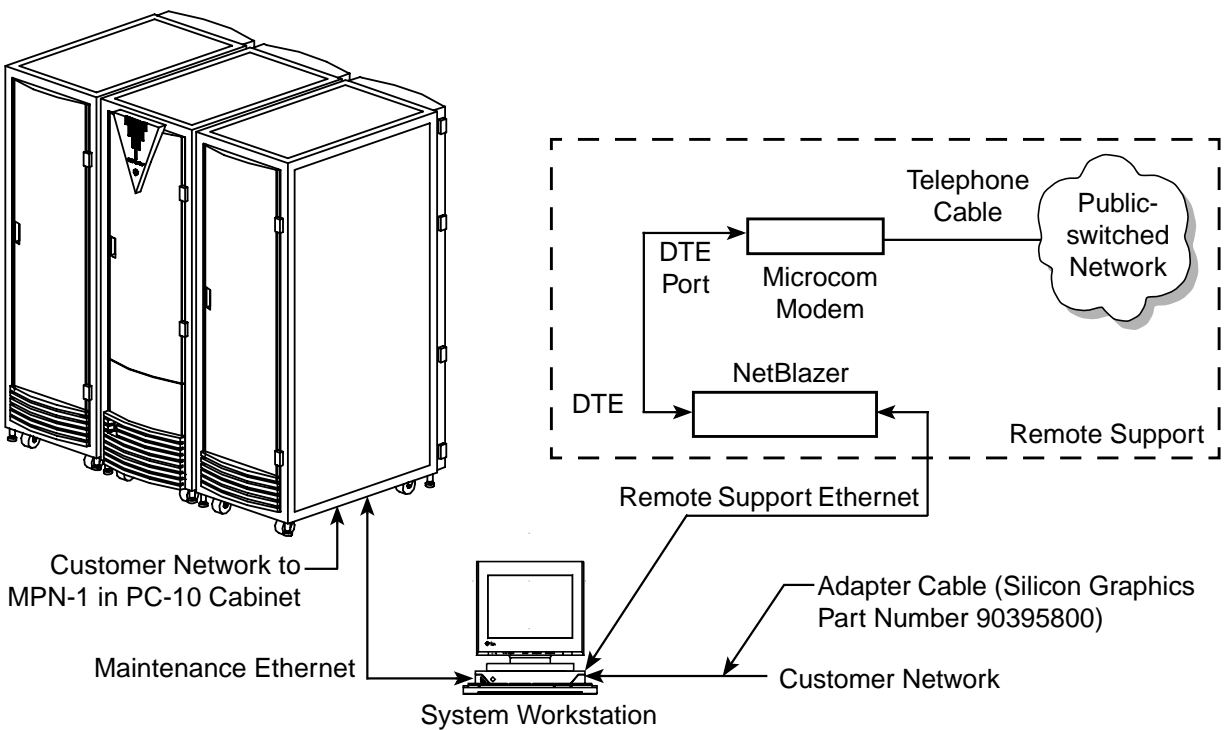


Figure 5. Network Connections, Optional NetBlazer Configuration



## **Raised-floor Installations**

The CRAY SV1-1A system does not require a raised-floor system. However, Silicon Graphics recommends a raised-floor system because it provides convenient routes for underfloor air circulation and for power and communication cabling. Silicon Graphics recommends a minimum raised-floor height of 12.00 in. (305 mm).

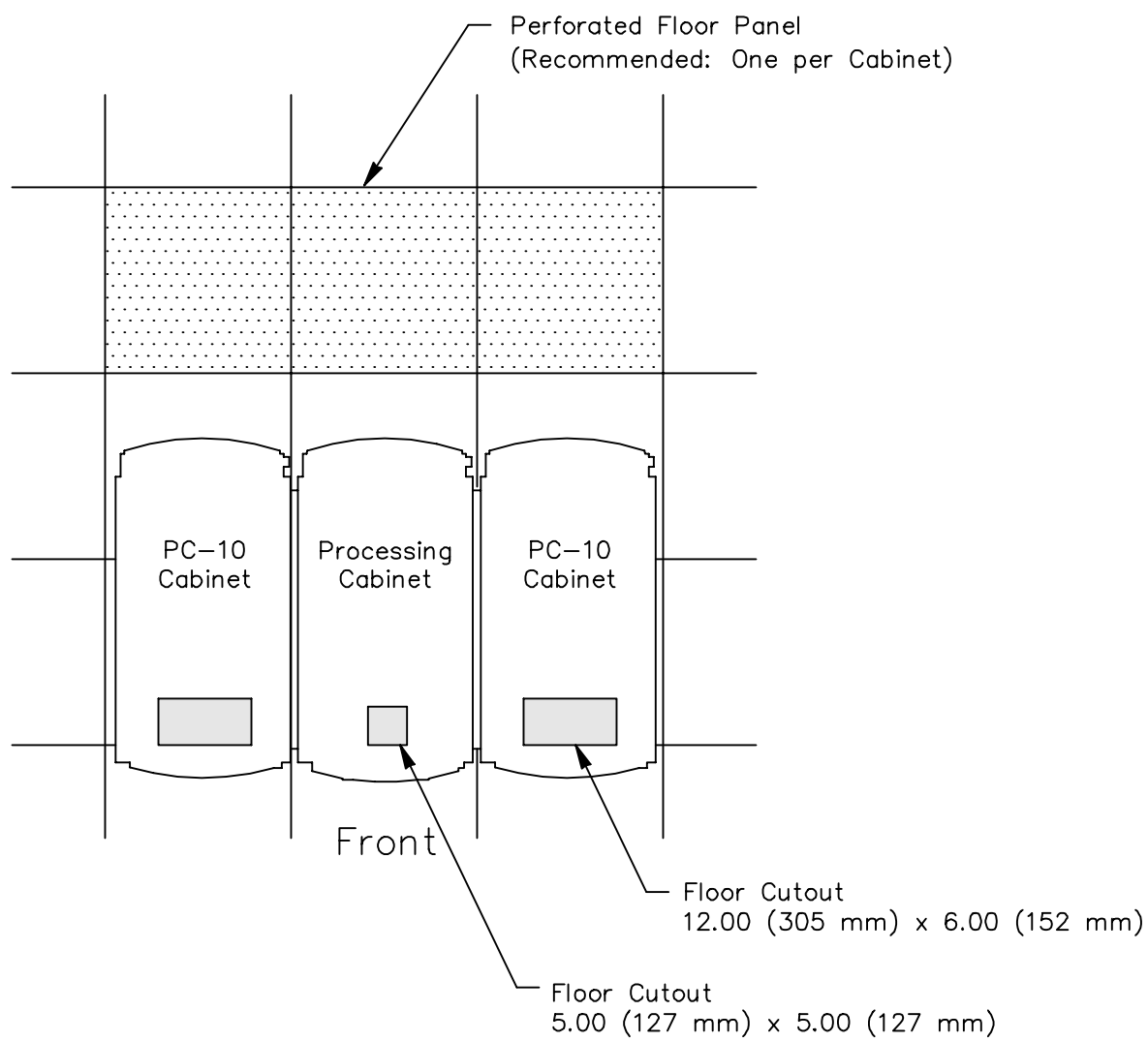
The computer room floor must support the weight of all system cabinets in your configuration. Each cabinet rests on four casters that concentrate the weight of the cabinet on a small surface area. Each cabinet that you install on a raised floor requires floor cutouts. When you design your raised-floor system, place perforated floor panels or floor grilles near the base of the rear of the cabinets, not directly under them.

Figure 6 illustrates the floor cutouts for cables and the recommended locations for perforated floor panels or floor grilles. Use the floor layout of the proposed location for the system and the floor layout diagram shown in Figure 6 to determine the exact area that the system requires.

Additional floor support pedestals increase the structural strength of the raised floor. If your computer site lies in an earthquake zone, you can secure the computer system components to the computer room subfloor for added stability. The processing cabinet and the PC-10 cabinet each contain four threaded fastening points for stabilizing the cabinet (refer to Figure 7).

If you have questions about the structural capabilities of any floor, please contact a qualified structural engineer. If you do not install your system on a raised floor, Silicon Graphics recommends that you install flat cable covers to protect cables from damage and computer room personnel from injury.

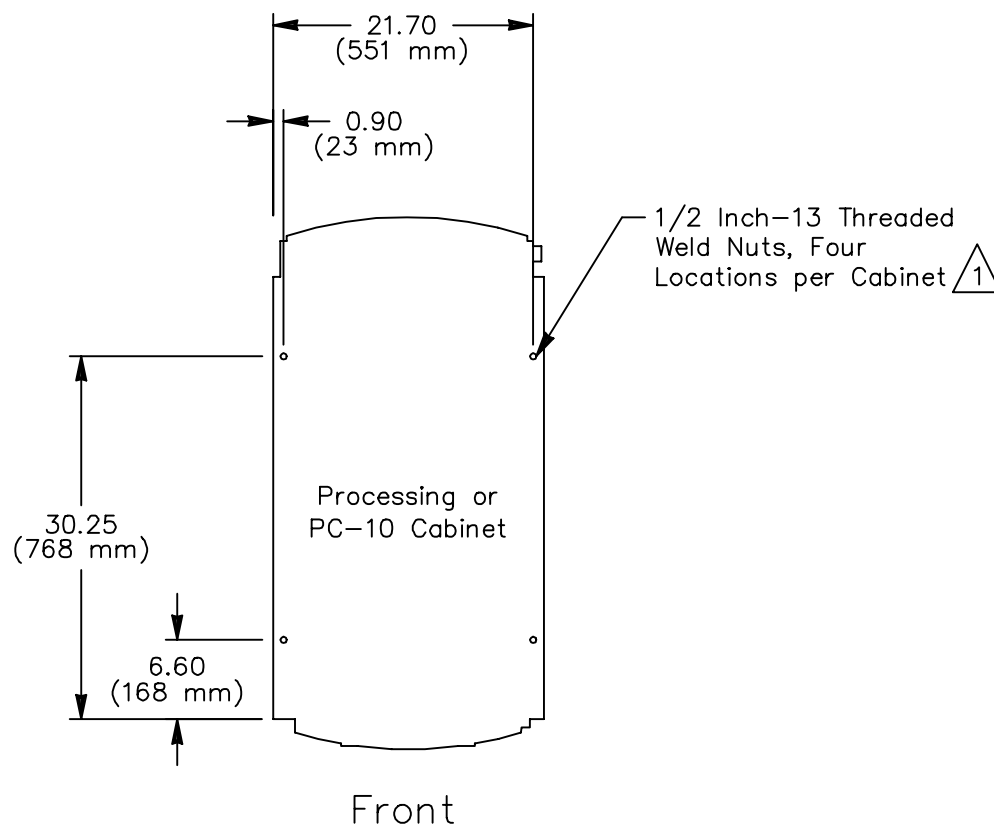
Figure 6. CRAY SVI-1A Floor Cutout Diagram



## Securing the Cabinets

In areas prone to earthquakes, you may secure the system to the computer room subfloor. Four 1/2 inch-13 threaded weld nuts are located on the underside of each cabinet frame for attachment points as shown in Figure 7.

*Figure 7. Cabinet Weld Nut Locations*



- $\triangle 1$  The 1/2 Inch-13 threaded weld nuts are located on the underside of each cabinet 3.50 inches (89 mm) up from floor level.

## System Physical Specifications

Table 4 lists the physical specifications for the system as well as maintenance access requirements. All system components require ambient air for cooling.

*Table 4. System Physical Specifications*

Characteristic	Specification
<b>Processing and PC-10 Cabinets</b>	
Height	70.20 in. (1783 mm)
Width:	
Processing cabinet and two PC-10 cabinets	69.80 in. (1773 mm)
Processing cabinet and three PC-10 cabinets	93.40 in. (2372 mm) <sup>a</sup>
Processing cabinet and four PC-10 cabinets	117.00 in. (2972 mm) <sup>a</sup>
Depth:	
Processing cabinet	44.25 in. (1124 mm)
PC-10 cabinet	44.25 in. (1124 mm)
Footprint of processing cabinet and	
Two PC-10 cabinets	21 ft <sup>2</sup> (2.0 m <sup>2</sup> )
Three PC-10 cabinets	29 ft <sup>2</sup> (2.7 m <sup>2</sup> )
Four PC-10 cabinets	36 ft <sup>2</sup> (3.3 m <sup>2</sup> )
Weight (maximum per cabinet):	
CRAY SV1-1A 16-processor cabinet	800 lbs (363 kg)
PC-10 cabinet	951 lbs (431 kg)
Access requirement (back)	36.00 in. (914 mm)
Access requirement (front)	36.00 in. (914 mm)
Airflow (maximum per cabinet):	
Processing cabinet	1200 CFM (0.56 m <sup>3</sup> /s)
PC-10 cabinet	2700 CFM (1.27 m <sup>3</sup> /s)
Acoustical noise level:	
Processing cabinet	Less than 70 dBA at 3.3 ft (1 m)
PC-10 cabinet	Less than 67 dBA at 3.3 ft (1 m)

Table 4. System Physical Specifications (continued)

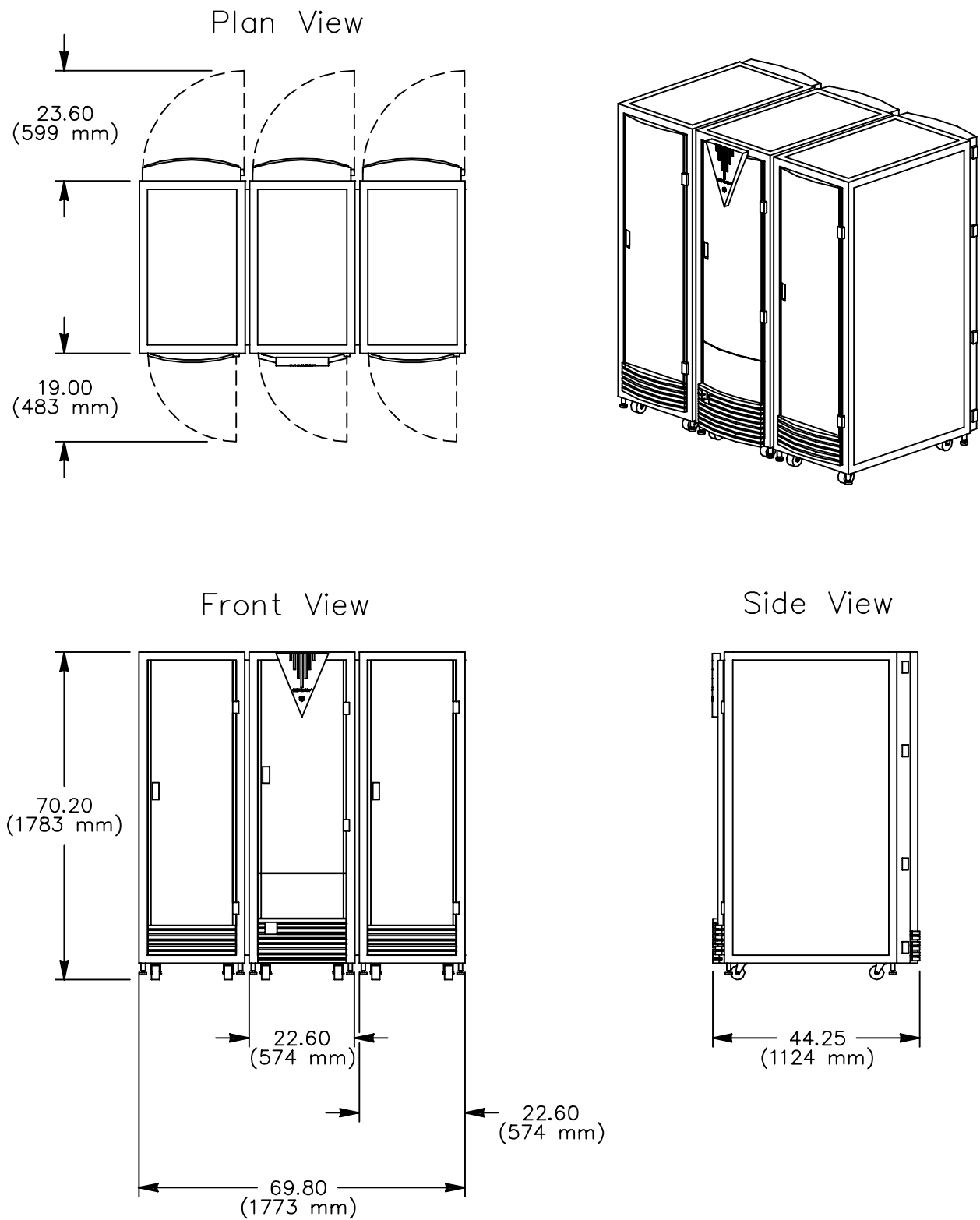
Characteristic	Specification
<b>Processing and PC-10 Cabinets (continued)</b>	
Shipping height	76.00 in. (1930 mm)
Shipping width	34.50 in. (876 mm)
Shipping depth	58.75 in. (1492 mm)
Shipping weight (maximum per cabinet): CRAY SV1-1A 16-processor cabinet PC-10 cabinet	965 lbs (438 kg) 1,116 lbs (506 kg)
<b>System Workstation (SWS)</b>	
Height	19.85 in. (504 mm)
Width	30.00 in. (762 mm)
Depth	25.50 in. (648 mm)
Weight	79 lbs (36 kg)
<b>Microcom Modem</b>	
Height	1.00 in. (25 mm)
Width	4.25 in. (108 mm)
Depth	5.20 in. (132 mm)
Weight	1 lb (0.5 kg)
<b>Optional NetBlazer Router</b>	
Height	2.40 in. (61 mm)
Width	8.50 in. (216 mm)
Depth	13.00 in. (330 mm)
Weight	4 lbs (2 kg)

<sup>a</sup> This specification includes 1.00 in. (25 mm) clearance between PC-10 cabinets.

## Processing and PC-10 Cabinets

Figure 8 shows the dimensions of the CRAY SV1-1A processing cabinet and PC-10 cabinet. Refer to Table 2 for processing and PC-10 cabinet electrical specifications and receptacle model numbers. Table 4 lists the physical specifications and access requirements. Each cabinet includes casters for mobility and leveling pads for stability.

Figure 8. Processing and PC-10 Cabinet Dimensions



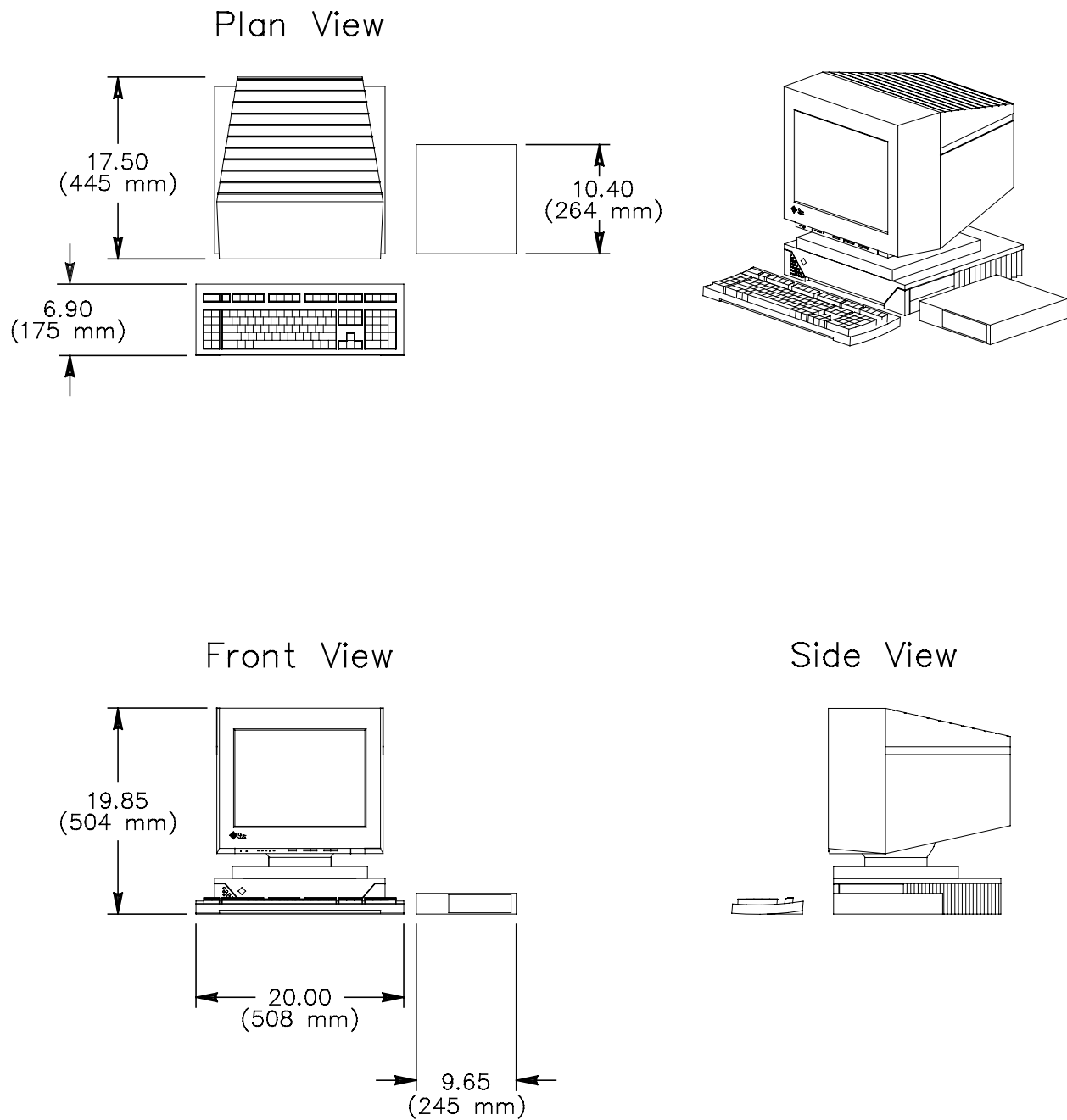
## System Workstation

The system workstation (SWS) is a Sun Microsystems, Inc. SPARCstation 5 workstation (refer to Figure 9). The customer is responsible for supplying a table and chair. The table must be at least 48.00 in. (1219 mm) wide by 30.00 in. (762 mm) deep. The workstation provides two Ethernet ports: one port is for the customer network, and the other port is for maintenance. Refer to “Network Connections” for more information about customer network connections. Refer to Table 2 for system workstation electrical specifications and receptacle model numbers. Table 4 lists the physical specifications for the system workstation.

**Note:** The Silicon Graphics maintenance Ethernet network connects the system workstation to an I/O node on the GigaRing channel. This Ethernet network is to be used for service only. The system may operate unpredictably if this Ethernet network is connected to the customer Ethernet network.



Figure 9. System Workstation



## Microcom Modem

Silicon Graphics supplies the Microcom DeskPorte P modem (refer to Figure 10) as the standard modem for remote support communications for CRAY SV1-1A series systems installed in North America. The Microcom DeskPorte P modem offers V.fast data transfer at speeds nominally up to 33,600 bits per second (bps) with Dynamic Transmit Level Adjustment (DTLA) and MNP Class 10.

Refer to Table 2 for the modem electrical specifications. Table 4 provides the modem physical specifications.

International sites and service centers should consult the Silicon Graphics Remote Support Administrator assigned to their country for the appropriate model of modem. Contact your account manager to obtain the name of your Remote Support Administrator.

**Note:** Microcom modems, which are standard equipment for all system shipments in North America, provide predictable performance and reliability. The brand, model, and design of the modem used at international locations may vary according to local government regulations. Network administrators can provide specific information about basic modem settings to facilitate the installation of modems from other vendors.

Telephone representatives might request information about the modem requirements. Refer to Table 5 for the modem requirements.

*Table 5. Modem Requirements*

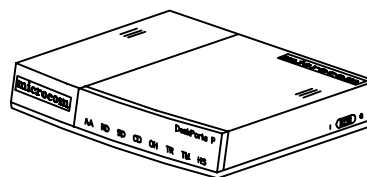
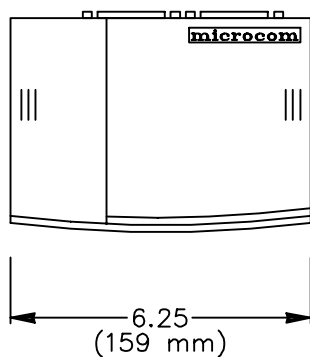
Option	Specification
FCC registration number	CLB CHN-23504-MM-E
Transmission rate	V.34/V.32/V.42bis (33,600 bps)
Telephone	Standard, with data-grade line
Telephone connector	RJ11
Line interface connector	RJ11
Touch tone/rotary dial	Touch tone preferred
Ringer equivalence	0.4 Bd
External/internal clock	Internal
Grounding	Chassis ground to signal ground
Transmit level	Up to 115.2 kBps
Private/dial-up line	Dial-up line
Receive long space disconnect	Disabled
Transmit long space disconnect	Disabled

Table 5. Modem Requirements (continued)

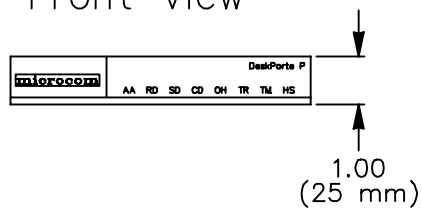
Option	Specification
Data terminal ready disconnect	Enabled
Carrier fail disconnect	Enabled
Auto-answer/manual-answer	Auto-answer
Make busy in analog loopback	Disabled
Permanent/DTR controlled auto-answer	DTR controlled auto-answer
Synchronous/asynchronous	Asynchronous
9-bit/10-bit/11-bit character	10-bit character

Figure 10. Microcom Modem

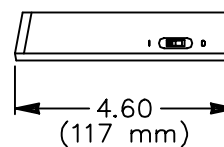
Plan View



Front View



Side View



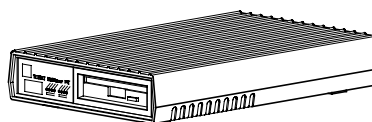
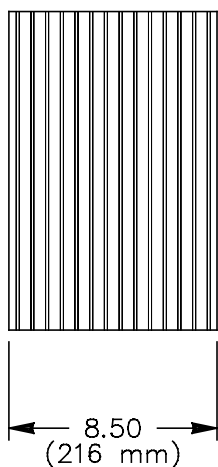
## NetBlazer Router

Silicon Graphics uses the optional NetBlazer dial-up router model PN2 (refer to Figure 11) for remote hardware maintenance, system operation, and system monitoring. You may install the NetBlazer dial-up router with the CRAY SV1-1A computer system to provide additional communication security.

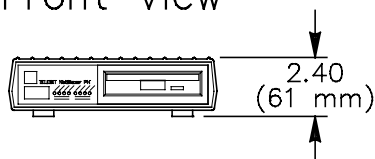
Refer to Table 2 for the optional NetBlazer router electrical specifications. Table 4 lists the NetBlazer router physical specifications.

*Figure 11. NetBlazer Dial-up Router*

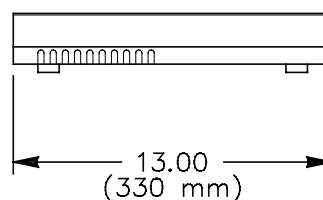
### Plan View



### Front View



### Side View



## Site Planning Checklist

Table 6 provides a site planning checklist that you can use as an organizational tool during the site planning and preparation process. During the planning process, you might discover additional preparation issues at your site that this checklist does not address. Refer to this checklist 6 to 8 weeks before Silicon Graphics ships your system. To discuss your site plans and to resolve any issues, contact a Silicon Graphics site planning representative by one of the methods listed in the summary of this document.

*Table 6. Site Planning Checklist*

Yes	No	Item	Comments
		Has the system configuration been determined? Configuration: _____	
		Has an installation date been determined? Date: _____	
		What is the total number of system cabinets?	
		Has the system location been established?	
		Does the equipment floor layout meet the equipment maintenance access requirements?	
		Is the equipment positioned so that the exhaust air of one heat-discharging device does not enter the air inlet of another?	
		Has an access route to the final system location been identified?	
		Does the access route satisfy the access requirements outlined in "Planning Your Access Route"?	
		Does the access route meet the floor-loading requirements for the system?	
		Have provisions been made to cover irregular or engraved floor patterns along the access route to reduce vibration of the system while moving it?	
		Will customer assistants be available to help Silicon Graphics personnel unload, unpack, and move the system during delivery?	
		Does your loading dock meet standard freight-carrier truck requirements? If not, has a forklift been allocated for delivery? You may contact site planning representatives by telephone in the USA at 1 800 284 2729, extension 62820; or at +1 715 726 2820; or by e-mail at <a href="mailto:site@cray.com">site@cray.com</a> if you have concerns about your loading dock.	

Table 6. Site Planning Checklist (continued)

Yes	No	Item	Comments
		Has a pallet jack been provided to move the system in its shipping crate to the final system location?	
		Do the pallet-jack fork dimensions meet requirements for the shipping crate?	
		Are the elevator and elevator door dimensions adequate?	
		Is the elevator weight capacity adequate?	
		Does each ramp in the access route have an incline that is less than 10 degrees?	
		Has the operating voltage for the processing cabinet and PC-10 cabinet(s) been determined?	
		Have the power receptacles been ordered for the processing cabinet and each PC-10 cabinet?	
		Are the circuit breakers for the processing cabinet and each PC-10 cabinet properly installed and labeled?	
		Is the power receptacle located within 6 ft (1.8 m) of the processing cabinet? Has the receptacle been properly installed and labeled?	
		Is each power receptacle located within 6 ft (1.8 m) of each PC-10 cabinet? Have the receptacles been properly installed and labeled?	
		Are the floor cutouts for the processing cabinet and each PC-10 cabinet in place?	
		Are recommended perforated floor panels in place?	
		Are the power receptacles for the system workstation, optional NetBlazer router, and Microcom modem installed and properly positioned to satisfy power circuit requirements? Are they properly labeled?	
		Have a table and chair been provided for the system workstation?	
		Is the floor cutout for the system workstation in place?	
		Is the system workstation within 45 ft (13.7 m) of the PC-10 cabinet to meet the standard cable-length requirement?	
		Is the computer room floor rated for system floor loading?	
		Does the computer room environment meet the Silicon Graphics specifications for temperature and humidity listed in "Environmental Requirements"?	
		Can the computer room environment specifications be properly maintained within the specifications listed in Table 1?	

Table 6. Site Planning Checklist (continued)

Yes	No	Item	Comments
		Is additional fire suppression equipment required?	
		Are dedicated telephone lines for remote maintenance installed in the proper location?	
		Have the required network connections been installed for the system?	
		Have the required network connections (if any) been installed for the system workstation?	
		Have all required network addresses been established?	

## Agency Approvals

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The CRAY SV1-1A systems meet the requirements of the following electrical safety standards: Underwriter Laboratories, Inc. (UL) 1950, Canadian Standards Association (CSA) 22.2 M950, Euronorm (EN) 60950, and International Electrotechnical Commission (IEC) 950.

The CRAY SV1-1A systems also comply with the electromagnetic compatibility requirements of the United States Federal Communications Commission (FCC), Canadian Department of Communications (DOC), Voluntary Control Council for Interference by Information Technology Equipment (VCCI), European Community Electromagnetic Compatibility Directive (89/336/EEC [amended]), and the Comité Internationale Special Des Perturbations Radioelectriques (CISPR [Number 22]).

## Summary

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Now that you understand the basic configurations and requirements of a CRAY SV1-1A system, you can make appropriate plans for your site. Silicon Graphics site planning representatives are available for consultation regarding site planning and preparation. You may use any of the following methods to contact site planning representatives:

- Phone +1 715 726 2820 or, in the USA: 1 800 284 2729, extension 62820
- Fax +1 715 726 2969
- E-mail [site@cray.com](mailto:site@cray.com)
- Web site <http://site.cray.com>

