Preparing for a CRAY J916™ System Installation

HR-04072-0C

CRAY RESEARCH
A Silicon Graphics Company

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Preparing for a System Installation

HR-04072-0C
CRAY J916 Systems
Last Modified: August 1997

Figures

Tables

Record of Revision

January 1995

Original printing.

Revision A: May 1995

Updated the document with new drawings and revised the remote support information.

Revision B: December 1996

Corrected environmental requirements in Table 1 and in the NOTE. Revised Figure 2, Figure 3, Figure 8, Figure 10, and Figure 11 and added Table 5.

Revision C: August 1997

The “Environmental Requirements” section now includes a note about installation requirements that relate to the EMC Directive. The “Overview” and “Summary” sections include a Web site listing.

Overview

This document provides information that helps management and site preparation personnel prepare suitable environments for CRAY J916™ computer systems. It describes configurations, electrical requirements, power consumption, environmental requirements, and remote support equipment.

Cray Research site planning representatives are available for consultation regarding site planning and preparation. You may contact site planning representatives by telephone in 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*; or at *http://site.cray.com* on the Web. Contact your account manager to obtain configuration information for any CRAY J916 system.

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

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

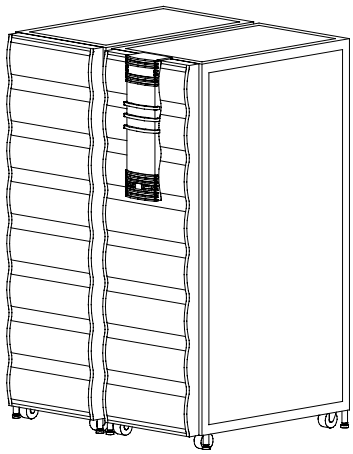
1. Identify the space, power, and environmental requirements for the system.
2. Select a location for the system and identify any necessary modifications.
3. Prepare the site according to the guidelines in this publication. Refer to Table 6 for more information.

System Configurations

The CRAY J916 computer system is an air-cooled, multicabinet configuration that consists of a variety of standard and optional equipment. The configuration of each computer system depends on customer requirements. Each system has a minimum of two cabinets: a processing cabinet and a peripheral cabinet. The system can include from one to three additional peripheral cabinets (refer to Figure 1). The processing cabinet contains the processor and memory modules, and the peripheral cabinet contains the I/O subsystem(s), disk subsystem(s), and tape subsystem(s). Each peripheral cabinet contains its respective bulkhead connections for external network and peripheral attachments.

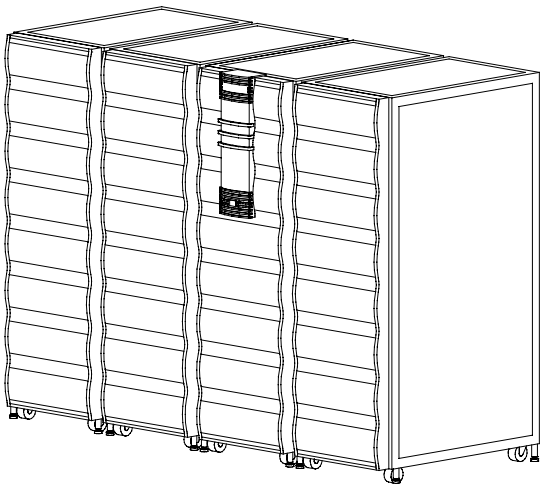
The computer system also includes a system console, which consists of a SPARCstation® 5 workstation with a color monitor, keyboard, and mouse. The system console provides monitoring, diagnosis, control, and configuration management of Cray Research computer systems. Refer to Figure 9 for an illustration of the system console.

Figure 1. System Cabinet Configurations



CRAY J916 PROCESSING
AND ONE PERIPHERAL CABINET
(MINIMUM CONFIGURATION)

CRAY J916 PROCESSING
AND TWO PERIPHERAL CABINETS



CRAY J916 PROCESSING
AND THREE PERIPHERAL CABINETS

CRAY J916 PROCESSING
AND FOUR PERIPHERAL CABINETS
(MAXIMUM CONFIGURATION)

Site Requirements

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 in 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. Cray Research 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.**

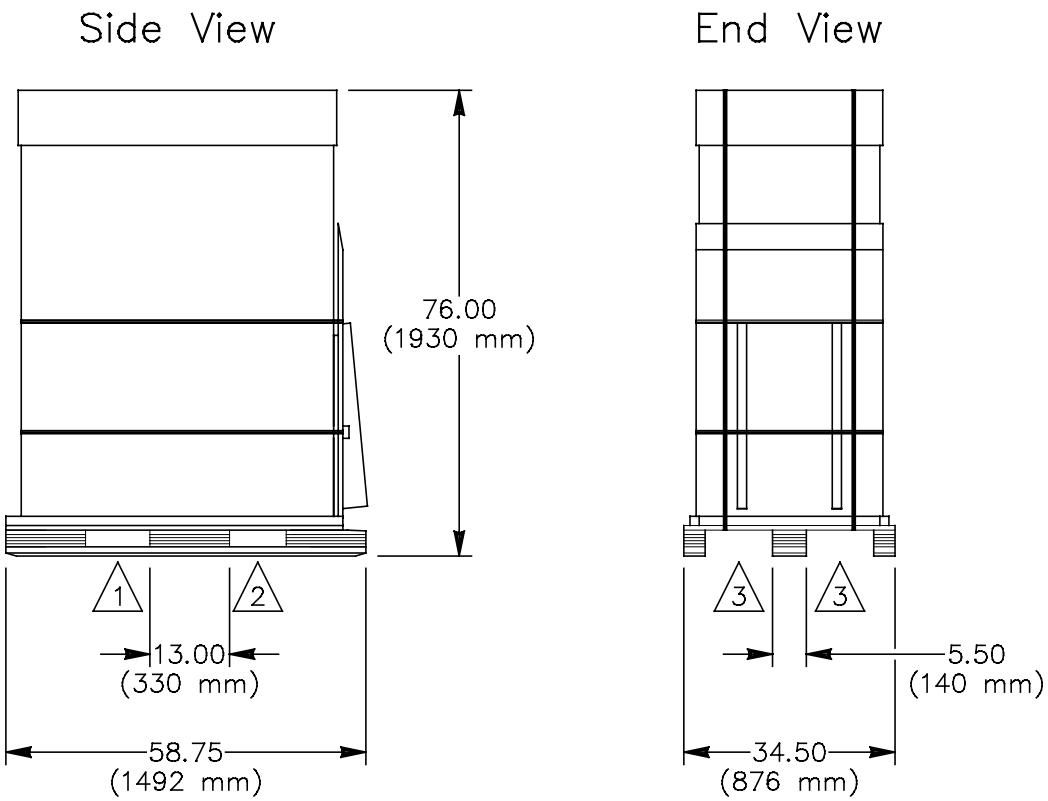
Cray Research recommends that you leave each system cabinet in its shipping crate until it reaches its final destination. If the crate is too large for the planned access route, you may need to partially disassemble it.

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 1,165 lbs (528 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

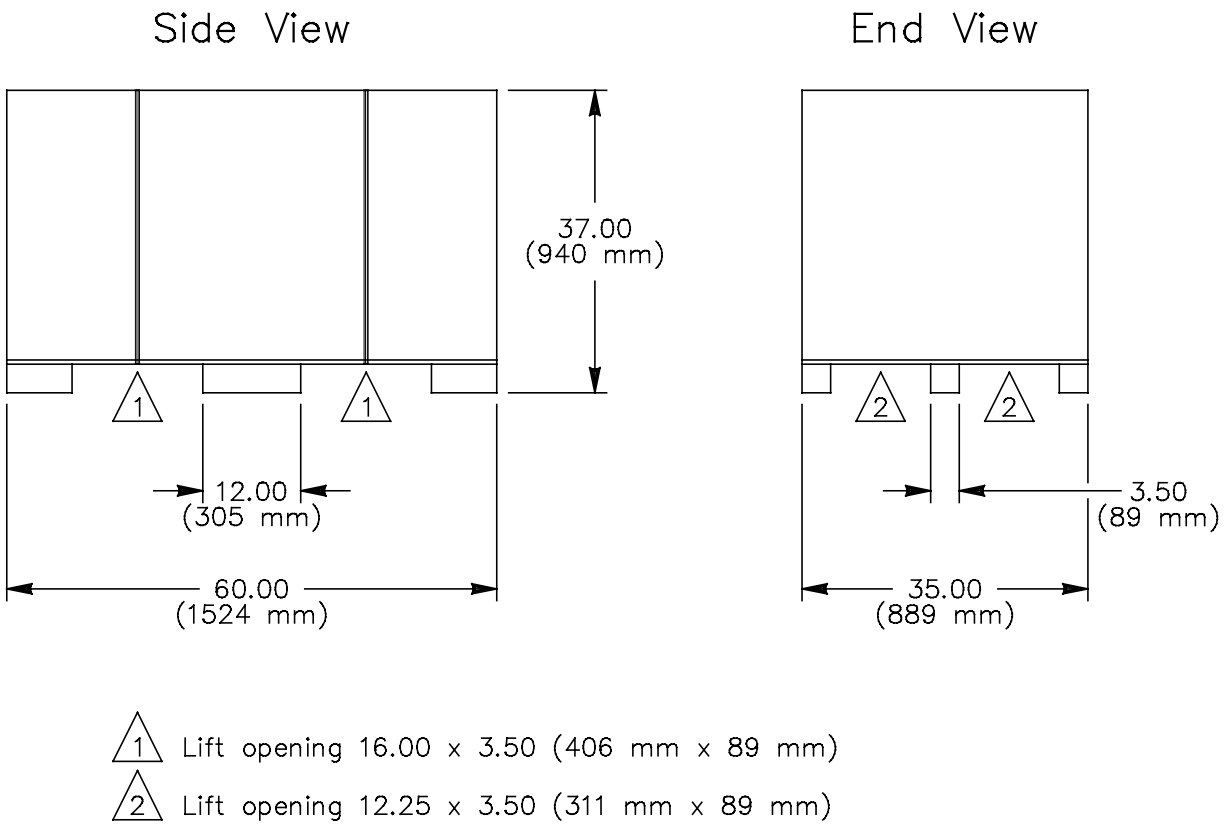


1 Lift opening 10.50 x 2.75 (267 mm x 70 mm)

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



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. When you install the system, ensure that heated air from other equipment does not discharge towards the air intake of the system. The air intake is located on the front of each system cabinet and the heated air is exhausted out the back of each cabinet. Overheating can occur if heated air discharges toward the front of the processing or peripheral cabinet.

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.

NOTE: Based on the performed tests, the essential requirements of the EMC Directive are met if this equipment is installed in an industrial area with less than 3V/m radiated disturbance.

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

Table 1. Environmental Requirements

Characteristic	Specification
Temperatures:	
Operating	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 [a]	34 to 120 °F (1 to 49 °C)
Relative Humidity:	
Operating	20% to 80% noncondensing
Nonoperating	20% to 80% noncondensing
Shipping	5% to 95% noncondensing
Storage [a]	10% to 80% noncondensing
Altitude:	
Operating	0 to 6,562 ft (0 to 2000 m)

[a] Cray Research assumes that the system is stored in its crate.

Facility Power Requirements

Table 2 lists the electrical specifications for a single CRAY J916 processing or peripheral cabinet, the system console, and the optional modem and Telebit® NetBlazer® dial-up router.

Cray Research recommends that all power circuits that supply power to the CRAY J916 system originate from the same electrical distribution panel. Electrical work and installations must comply with applicable local, state, or national electrical codes.

Cray Research makes every effort to minimize the effects of power failures and interruptions to the hardware. However, if the computer equipment experiences repeated power interruptions and fluctuations, it is more susceptible to a higher component failure rate than a system with a stable power source. Cray Research encourages you to provide a stable power source, such as an uninterruptible power system (UPS), to reduce the possibility of component failures.

Each CRAY J916 processing cabinet and peripheral cabinet requires its own customer-supplied circuit breaker and receptacle.

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

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

- The system console requires two customer-supplied receptacles.
- The Microcom® modem (optional) requires one customer-supplied receptacle.
- The NetBlazer (optional) router requires one customer-supplied receptacle.

If you have difficulty supplying these receptacles, please contact your Cray Research account manager.

Table 2. Facility Power Requirements

Electrical Service	Specification
The Processing Cabinet Requires:	
Voltage	200 to 240 Vac, single phase [a]
Frequency	47 to 63 Hz
Circuit breaker	30 amp
Power consumption	Maximum 3.79 kVA (3.60 kW) 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 Receptacle:International	IEC309, 30-amp, Hubbell® #330C6W or equivalent [b] IEC309, single phase, 32 amp
Each Peripheral Cabinet Requires:	
Voltage	200 to 240 Vac, single phase [a]
Frequency	47 to 63 Hz
Circuit breaker	30 amp
Power consumption	Maximum 4.42 kVA (4.20 kW) 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 Receptacle: International	IEC309, 30-amp, Hubbell #330C6W or equivalent [b] IEC309, single phase, 32 amp
The System Console Requires:	
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 (2 supplied)	8-ft (2.4-m) pluggable drop cords
Receptacles: North America and Japan (2 required)	NEMA #5-15R or equivalent
Receptacles: International (2 required)	IEC309, single phase,16 amp

Table 2. Facility Power Requirements (continued)

Electrical Service	Specification
The Optional Modem Requires:	
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
The Optional NetBlazer Router Requires:	
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 Receptacle: International	NEMA #5-15R or equivalent IEC309, single phase,16 amp

[a] The system chassis have been tested for compliance with operation at +6% and -10% of the stated voltage for short periods of time.

[b] 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.

Table 3 provides information for calculating the air-conditioning requirements. Air-conditioning requirements depend 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 (kBtus).

NOTE: The maximum electrical and air-conditioning requirements for the processing cabinet and peripheral cabinet are as follows:

Electrical Requirements:

Processing cabinet	3.79 kVA (3.60 kW)
Peripheral cabinet	4.42 kVA (4.20 kW)

Air-conditioning Requirements:

Processing cabinet	12.28 kBtu/hr
Peripheral cabinet	14.33 kBtu/hr

Table 3. Electrical and Air-conditioning Requirements Worksheet

Device	Quantity	Electrical		Air Conditioning	
		kVA per Unit	kVA Total	kBtu/hr per Unit	kBtu/hr Total
Processing cabinet	1	0.30	0.30	0.98	0.98
Peripheral cabinet (1 to 4 per system)		0.05		0.17	
Processor module (1 to 4 per system)		0.26		0.87	
Memory module (MEM16–MEM128)	2 or 4	0.52	0.52	1.76	1.76
VME IOS (1 to 16 per system)		0.12		0.42	
DDI-10, IPI-2E controller and 4 DD-5I disk drives		0.42		1.42	
DDS-10, SI-3 controller and 4 DD-5s disk drives		0.35		1.18	
DDS-30, SI-3 controller and 4 DD-6S disk drives		0.20		0.65	
DSS-1 (SCSI disk subrack)		0.16		0.51	
DD-318 (8-Gbyte DSS-1/2 drive)		0.03		0.10	
DDR-5, IPI-2E controller and 2 DD-5I disk drives		0.77		0.81	
SI-3X, Fast and wide SI-3 controller with buffered connectivity		0.05		0.17	
EI-2, Ethernet interface		0.05		0.17	
FI-2, FDDI		0.05		0.17	
HI-P, Memory HIPPI pair		0.04		0.15	
NetBlazer router (optional)		0.10		0.31	
Modem (optional)		0.01		0.03	
SPARCstation 5 system console		0.62		2.01	
			Total kVA		Total kBtu

Remote Support

Remote support is an optional maintenance feature for your system. Cray Research support personnel use a modem as a data communication link to troubleshoot and maintain Cray Research 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. Cray Research 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 Cray Research 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 Cray Research service personnel install and configure the appropriate software on the Telebit NetBlazer dial-up router.

Network Connections

Cray Research ships one IOS Ethernet controller and Ethernet attachment unit interface (AUI) bulkhead connector with each 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 specifications and use the signal quality error (SQE) heartbeat feature. The available network interfaces for the system are Ethernet, FDDI, memory HIPPI, and asynchronous transfer mode (ATM).

NOTE: The system console must be within 45 ft (13.7 m) of the peripheral cabinet if you use the standard 50-ft (15.2-m) Ethernet cable that Cray Research supplies.

The Cray Research private Ethernet network (Figure 4 and Figure 5) connects the system console BNC T-connector to the master I/O processor. This Ethernet network is to be used for maintenance only. The system may operate unpredictably if this Ethernet network is connected to the customer Ethernet network.

The customer Ethernet network may be connected to the system console via the micro-D connection on the system console. This connection requires an adapter cable (Sun Microsystems, Inc. part number 530-2021-01 or Cray Research part number 90395800) between the customer network and the AUI connector on the system console.

Figure 4. Network Connections, Modem-only Configuration

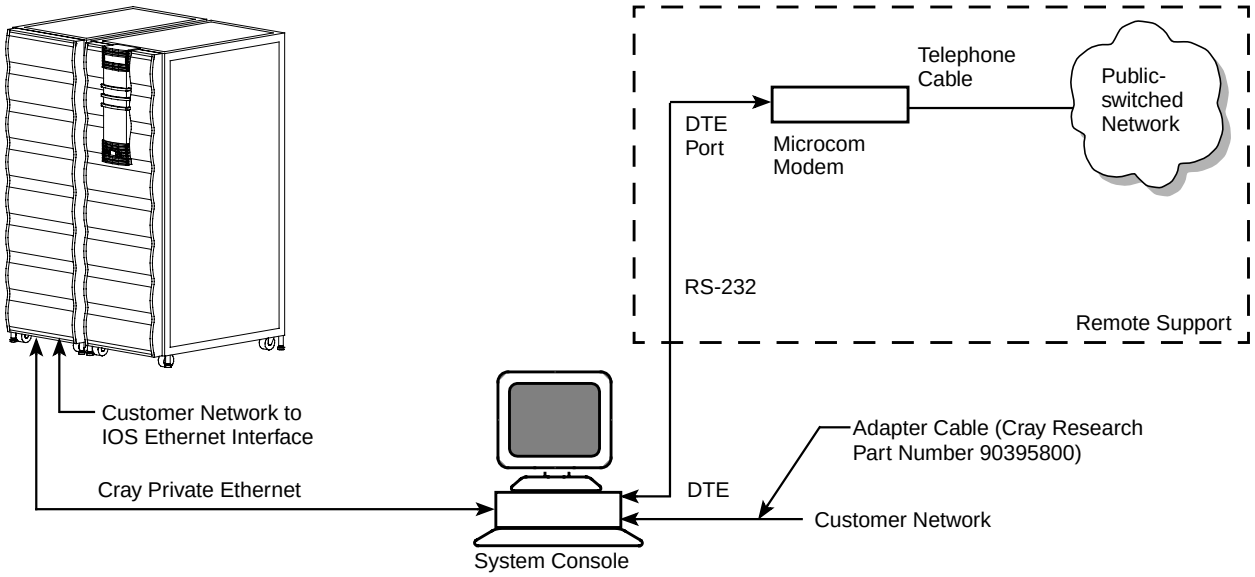
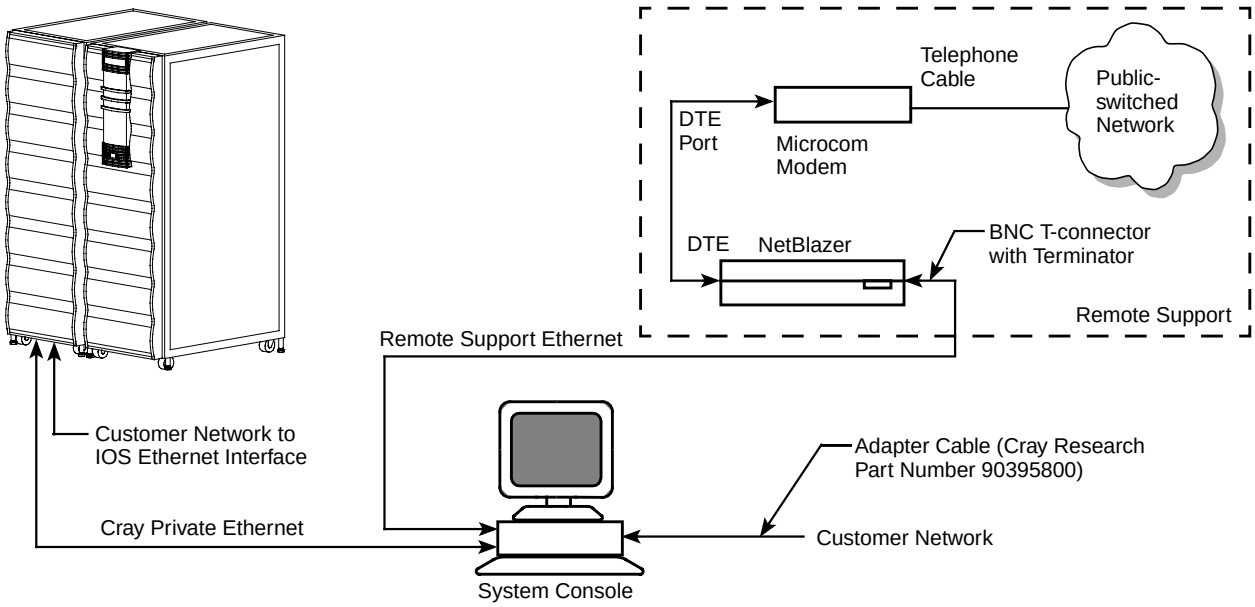


Figure 5. Network Connections, Optional NetBlazer Configuration



Raised-floor Installations

The CRAY J916 system does not require a raised-floor system. However, Cray Research recommends a raised-floor system because it provides convenient routes for underfloor air circulation and for power and communication cabling. Cray Research recommends a minimum raised-floor height of 12.00 in. (305 mm).

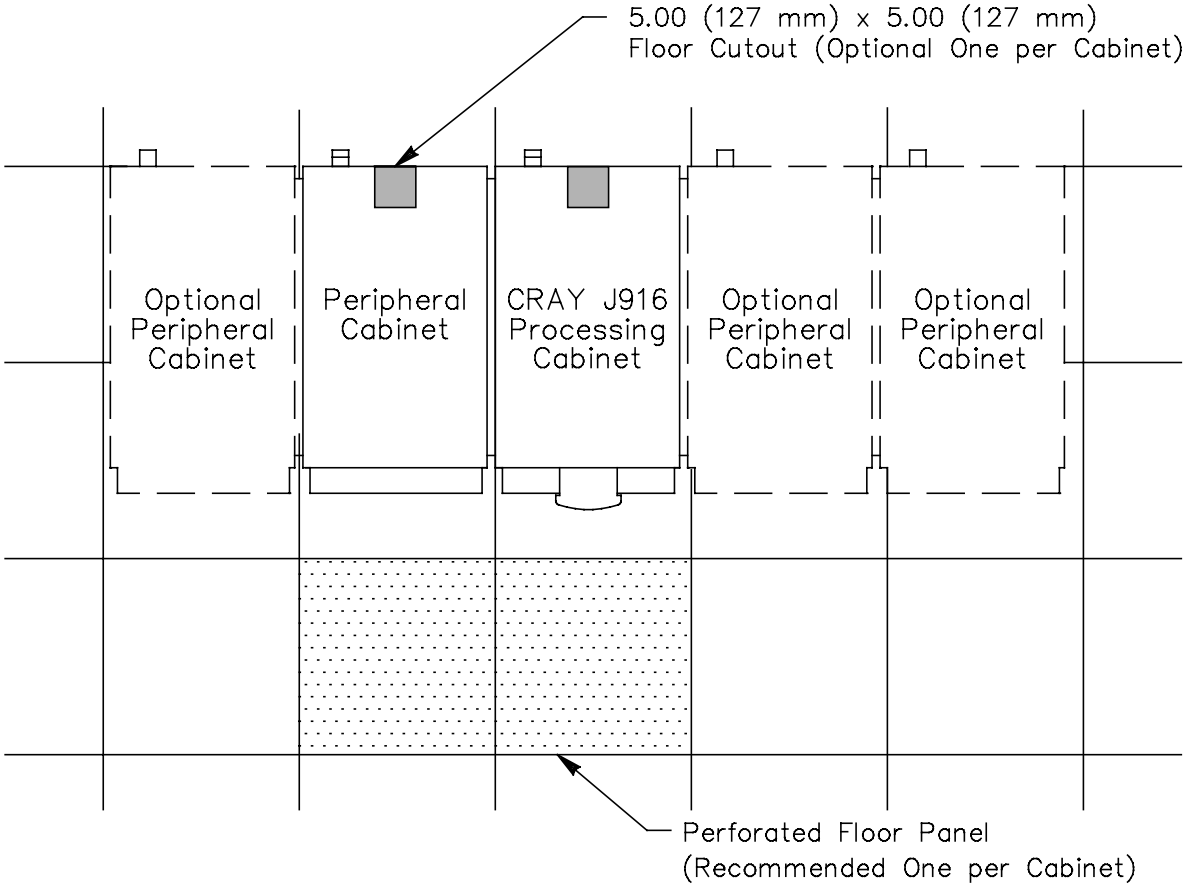
The computer room floor must support the weight of all system cabinets in your configuration. Each cabinet rests on four casters that concentrate the weight of the cabinet on a small surface area. Each cabinet that you install on a raised floor requires floor cutouts. When you design your raised-floor system, place perforated floor panels or floor grilles near the base of the front 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 peripheral cabinet each contain four threaded fastening points for stabilizing the cabinet.

If you have questions concerning the structural capabilities of any floor, please contact a qualified structural engineer. If you do not plan to install your system on a raised floor, Cray Research recommends that you use flat cable covers to protect cables and personnel from damage or injury.

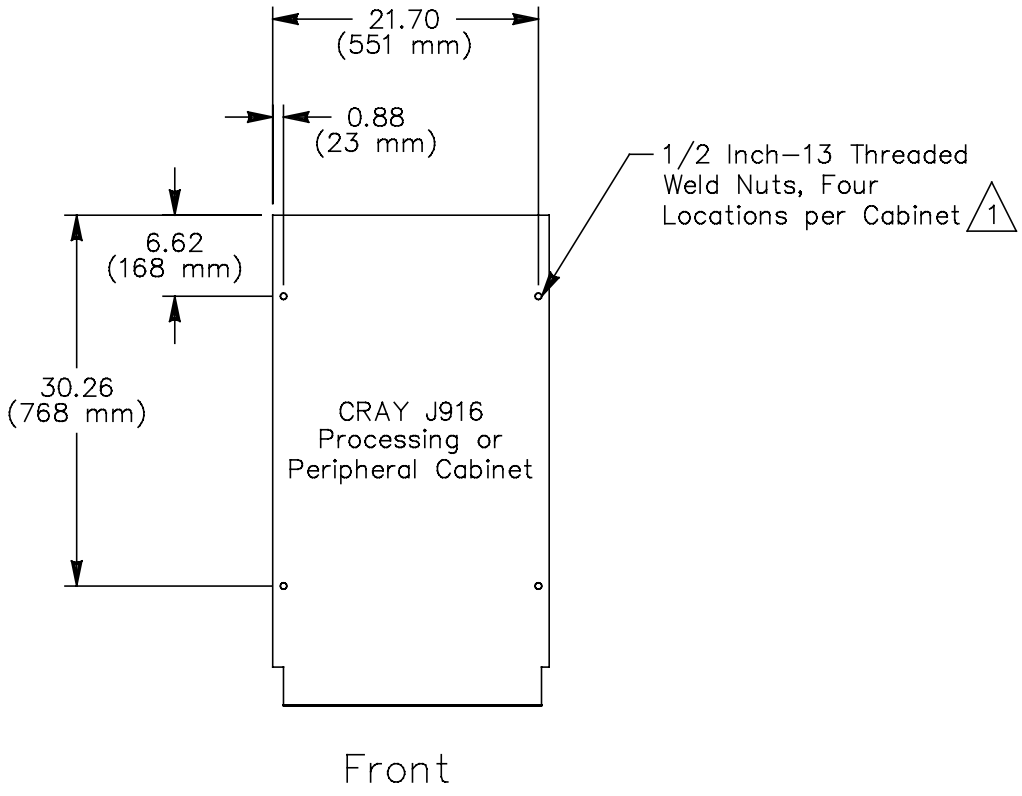
Figure 6. CRAY J916 Floor Cutout Diagram



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



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
Processing and Peripheral Cabinets	
Height	70.20 in. (1783 mm)
Width:	
Processing cabinet and one peripheral cabinet	46.20 in. (1173 mm)
Processing cabinet and two peripheral cabinets	69.80 in. (1773 mm)
Processing cabinet and three peripheral cabinets	93.40 in. (2372 mm)
Processing cabinet and four peripheral cabinets	117.00 in. (2972 mm)
Depth:	
Processing cabinet	43.90 in. (1115 mm)
Peripheral cabinet	41.90 in. (1064 mm)
Footprint of processing cabinet and	
One peripheral cabinet	Approximately 13 ft^2 (1.2 $m^{2)}$
Two peripheral cabinets	Approximately 20 ft^2 (1.9 m^2)
Three peripheral cabinets	Approximately 27 ft^2 (2.5 m^2)
Four peripheral cabinets	Approximately 34 ft^2 (3.2 m^2)
Weight (maximum per cabinet):	
Processing cabinet	800 lbs (363 kg)
Peripheral cabinet	1,000 lbs (454 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^3/s)
Peripheral cabinet	1500 CFM (0.70 m^3/s)
Acoustical noise level:	
Processing cabinet	Less than 70 dBA at 3.3 ft (1 m)
Peripheral cabinet	Less than 65 dBA at 3.3 ft (1 m)
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):	
Processing cabinet	965 lbs (438 kg)
Peripheral cabinet	1,165 lbs (528 kg)

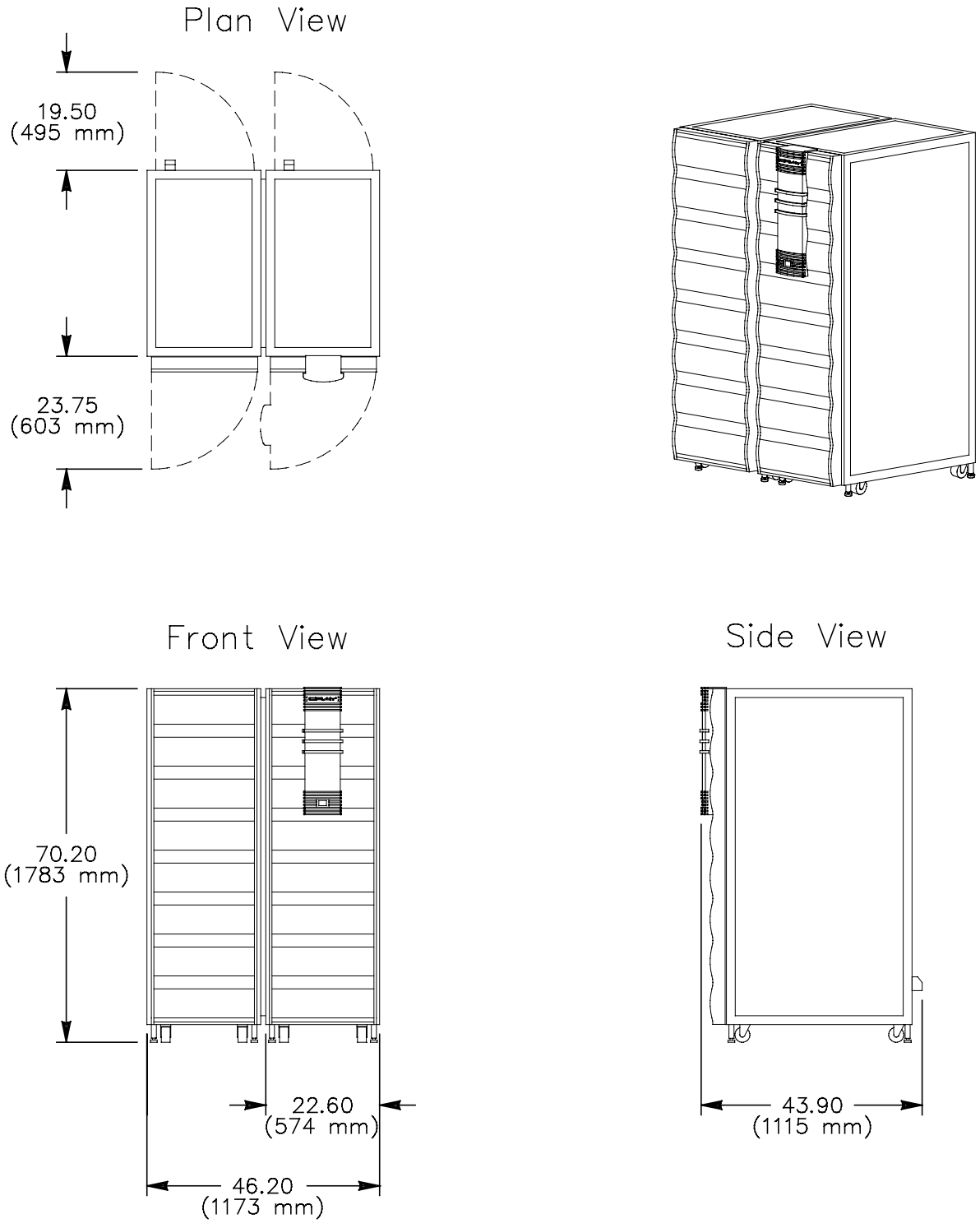
Table 4. System Physical Specifications (continued)

Characteristic	Specification
System Console	
Height	19.85 in. (504 mm)
Width	20.00 in. (508 mm)
Depth	25.50 in. (648 mm)
Weight	79 lbs (36 kg)
Microcom Modem (optional)	
Height	1.00 in. (25 mm)
Width	4.25 in. (108 mm)
Depth	5.20 in. (132 mm)
Weight	1 lb (0.5 kg)
NetBlazer Router (optional)	
Height	2.40 in. (61 mm)
Width	8.50 in. (216 mm)
Depth	13.00 in. (330 mm)
Weight	4 lbs (2 kg)

Processing and Peripheral Cabinets

Figure 8 shows the CRAY J916 processing and peripheral cabinets. Refer to Table 2 for processing and peripheral 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 Peripheral Cabinet Dimensions

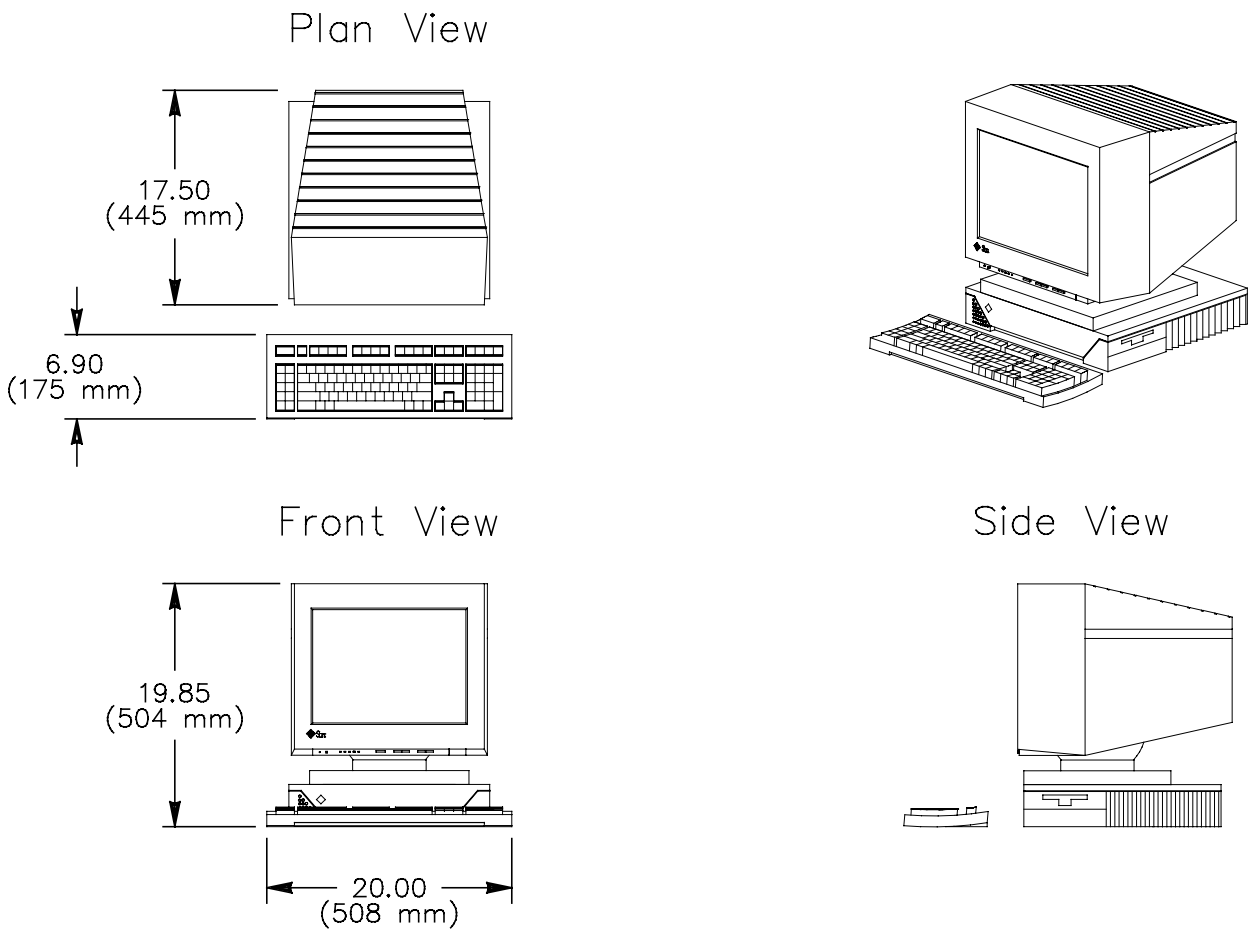


System Console

The system console (refer to Figure 9) is a Sun Microsystems, Inc. SPARCstation 5 workstation. 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 console electrical specifications and receptacle model numbers. Table 4 lists the physical specifications for the system console.

NOTE: The Cray Research Ethernet network (IOSNET) connects the system console to the master I/O processor. This Ethernet network is to be used for maintenance only. The system may operate unpredictably if this Ethernet network is connected to the customer Ethernet network.

Figure 9. System Console



Microcom Modem

Cray Research supplies the Microcom DeskPorte™ 28.8S modem (refer to Figure 10) as the standard modem for remote support communications for CRAY J90™ series systems installed in North America. The Microcom DeskPorte 28.8S modem offers V.fast data transfer at speeds nominally up to 28,800 bits per second (bps) with MNP® Class 10,
Adverse Channel Enhancements™ (ACE), and
Dynamic Transmit Level Adjustment™ (DTLA).

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

International sites and service centers should consult the Cray Research 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.

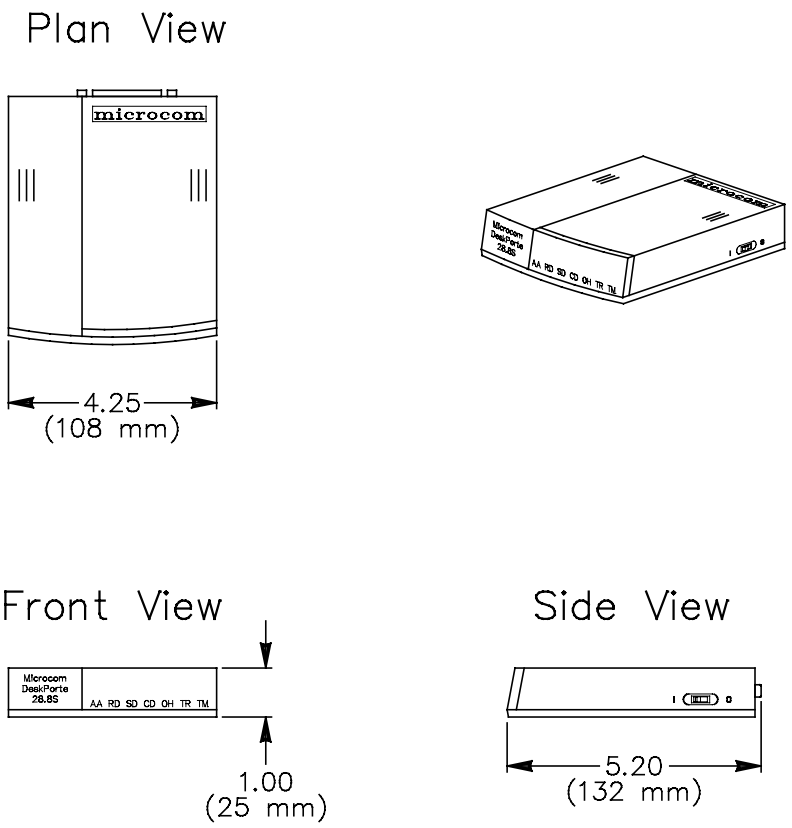
NOTE: Microcom modems, which are standard equipment for all system shipments in North America, provide predictable performance and reliability. The brand, model, and design of the modem used at international locations may vary according to local government regulations. Network administrators can provide specific information about basic modem settings to facilitate the installation of modems purchased 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 USA-75946-MME
Transmission rate	V.34/V.32/V.42bis (28,800 bps)
Telephone	Standard, with data-grade line
Telephone connector	RJ11C
Line interface connector	RJ45S
Touch tone/rotary dial	Touch tone preferred
Ringer equivalence	0.8 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
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

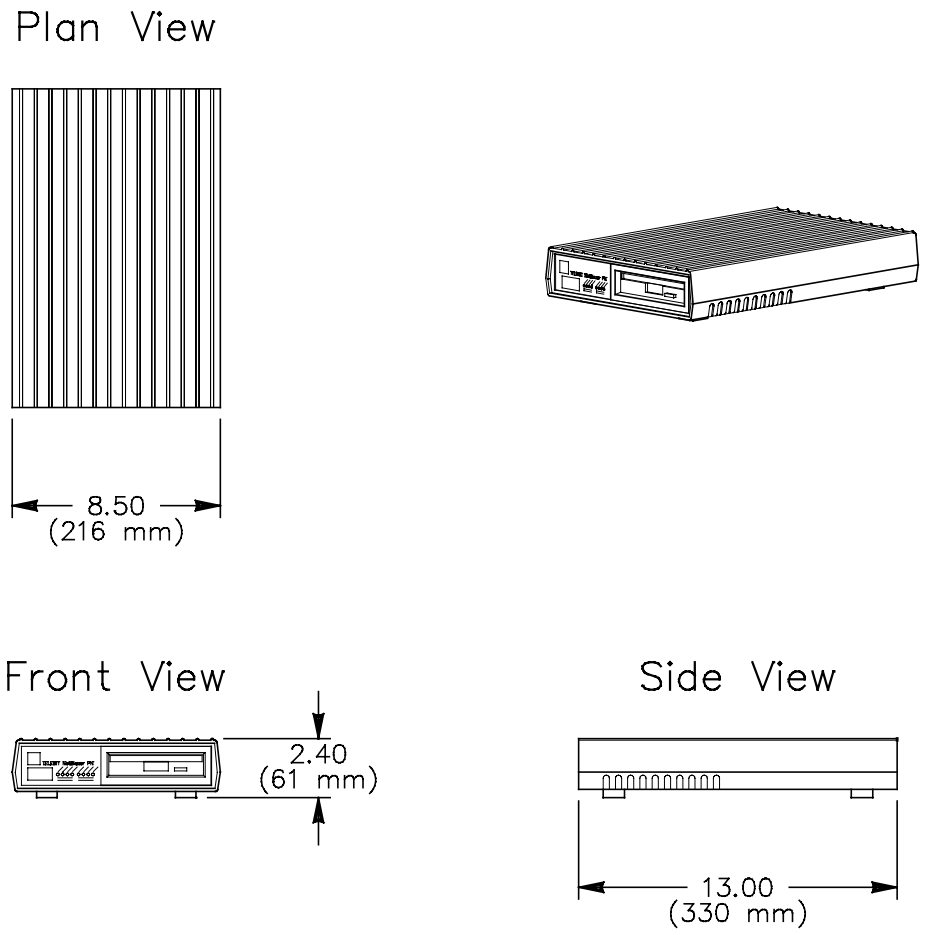


NetBlazer Router

Cray Research 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 J916 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



Site Planning Checklist

Refer to Table 6 for a site planning and site preparation checklist. This checklist is intended to serve as a guide; your site may have additional preparation issues that are not included in this checklist. Refer to this checklist 6 to 8 weeks before Cray Research ships your system.

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-rejecting 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?	
		Have personnel been allocated to unload 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 +1 715 726 2820; at *http://site.cray.com* on the Web; or by e-mail at *site@cray.com* if you have concerns about your loading dock.	
		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?	

Table 6. Site Planning Checklist (continued)

Yes	No	Item	Comments
		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 peripheral cabinet(s) been determined?	
		Have the power receptacles been ordered for the processing cabinet and each peripheral cabinet?	
		Are the circuit breakers for the processing cabinet and each peripheral cabinet properly installed and labeled?	
		Are the power receptacles within 6 ft (1.8 m) of the processing cabinet and each peripheral cabinet location? Have the receptacles been properly installed and labeled?	
		Are the floor cutouts for the processing cabinet and each peripheral cabinet in place?	
		Are recommended perforated floor panels in place?	
		Are the power receptacles for the system console, optional NetBlazer router, and optional 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 console?	
		Is the floor cutout for the system console in place?	
		Is the system console within 45 ft (13.7 m) of the peripheral cabinet to meet the standard cable-length requirement?	
		Is the computer room floor rated for system floor loading as listed in “Planning Your Access Route”?	
		Does the computer room environment meet the Cray Research specifications for temperature and humidity listed in Table 1?	
		Can the computer room environment specifications be maintained within the specifications listed in Table 1?	
		Is additional fire suppression equipment required?	
		Have dedicated telephone lines for remote maintenance been installed in the proper location?	

Table 6. Site Planning Checklist (continued)

Yes	No	Item	Comments
		Have system administrators and operators been enrolled in the necessary Cray Research training courses?	
		Have the required network connections been installed for the system?	
		Have the required network connections (if any) been installed for the system console?	
		Have all required network addresses been established?	

Agency Approvals

The CRAY J916 system meets 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 J916 system also complies 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

Now that you understand the basic configurations and requirements of a CRAY J916 system, you can make appropriate plans for your site. Cray Research 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*
- Web site *http://site.cray.com*