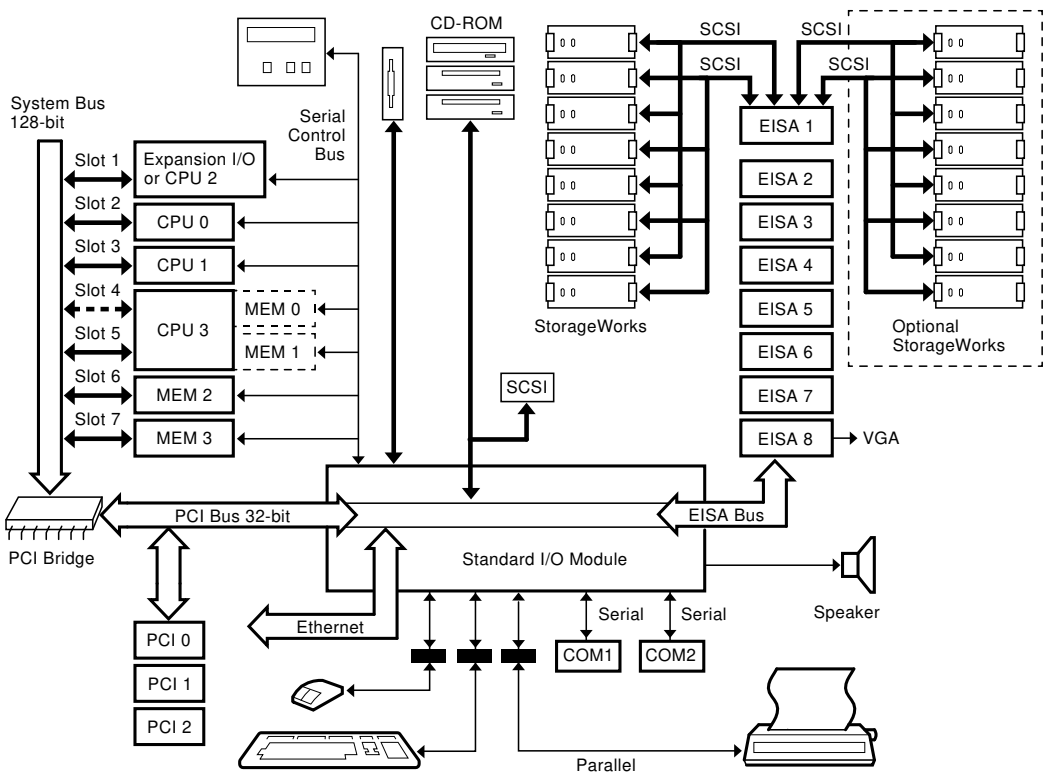
Table 1–1 System Characteristics

Characteristic	Description
Four–processor capability	System can be configured as a uniprocessor or with up to four processors.
High-performance PCI I/O subsystem	PCI is the emerging industry-standard bus that supports Digital and third-party options. The current implementation of PCI on the server has a peak bandwidth of 132 MB/sec.
EISA I/O bus	33 MB/sec EISA I/O bus supports industry standard EISA options, such as: Network adapters Video/audio options Storage adapters
Flexible mass storage strategy	StorageWorks compatible storage devices for low-cost, high-capacity flexible configurations
3.5-in. storage devices	Up to 16, 3.5-in. high performance disk drives may be configured in the BA740 pedestal enclosure, providing many independent disks that may be configured in stripe sets, shadow sets, or RAID sets to optimize performance according to customer requirements.
High availability	With the optional RAID controller, the system supports disk hot swap in StorageWorks shelves with the operating systems as well as clustering. Optional dual power supply provides N+1 redundancy. All models except model 4/200 support CPU failover.
CPU chip technology	The Alpha chip is manufactured using Digital's state-of-the-art CMOS process.
CPU chip design features	Superscalar, superpipelined.
System bus bandwidth	667 MB/sec (128-bit, 24-ns cycle.)
Memory	Up to two gigabytes of main memory will be supported.

Architecture

Figure 1–1 illustrates the server system architecture.

Figure 1–1 System Architecture



System Bus Options

The system bus interconnects the CPUs, memory modules, and the optional PCI external I/O module. It is the hardware structure through which data processed by the microprocessor is transferred throughout the system.

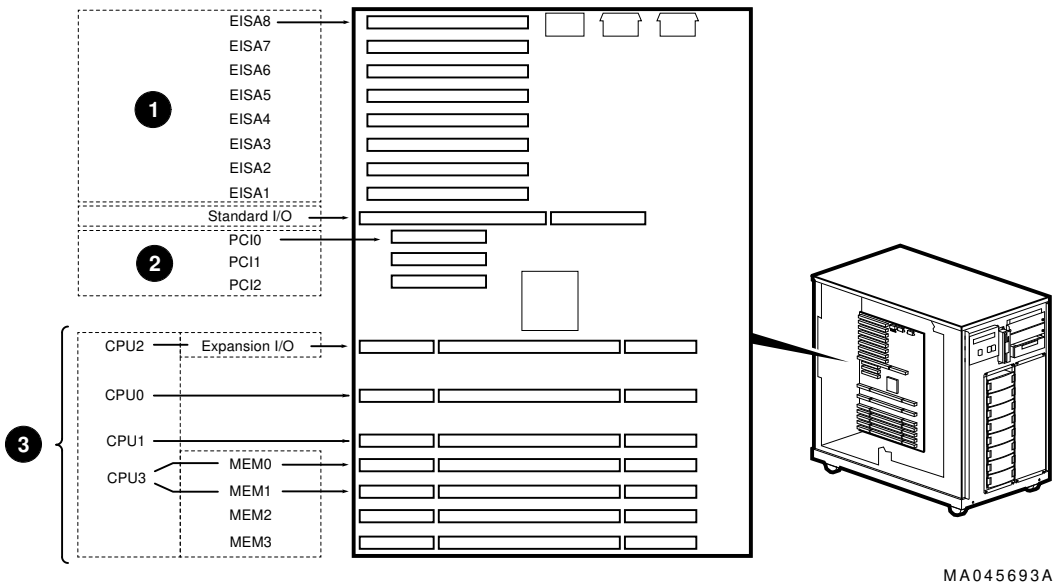
Figure 3–2 shows the location of the system bus and system bus options on the card cage. To access the card cage, remove the left panel. Refer to Figure 2–2 and the accompanying text before removing the left panel. Be sure to reattach the panel screws before attempting to power up the system again.

Caution

Do not remove the left panel when the system is running. If you remove the left panel without first properly shutting down the system, the system will power down unexpectedly and you may lose data.

Your system supports options for several types of bus architectures, including EISA, ISA, and PCI. The next sections describe the system bus options for your system. For information about installing a specific option, refer to the documentation for that option.

Figure 3–2 System Bus Option Locations



❶ EISA Bus

❷ PCI Bus

❸ System Bus

CPU Modules

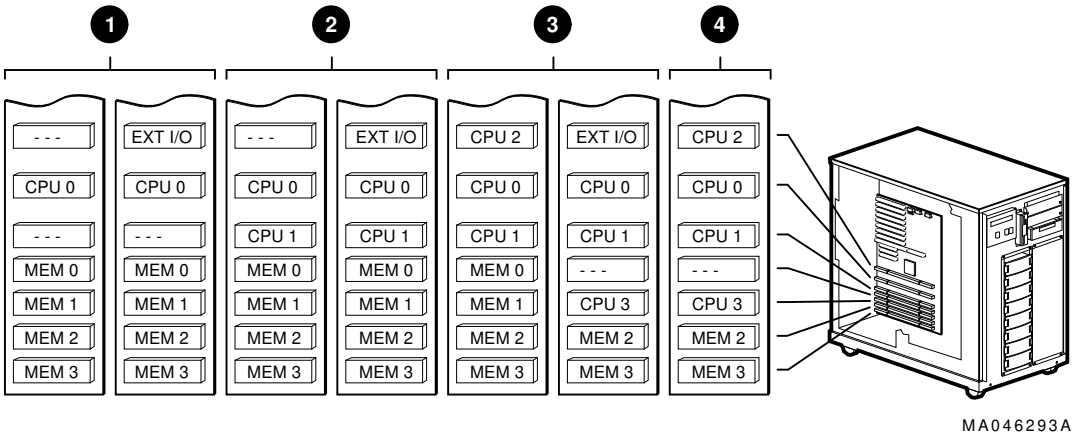
The AlphaServer 2100 system can support up to four CPUs in a symmetric multiprocessing (SMP) configuration:

- The system must have a CPU module installed in system bus slot 2 (CPU 0).
- Systems with more than two CPUs displace PCI expansion or memory module capacity as shown in Figure 3–3.
- You need a second power supply is your system is fully configured and contains a second storage assembly or more than two CPUs.

Warning

Before installing a CPU module, turn off all power to the system (both AC and DC). Refer to ‘‘Powering Down the System’’ in Chapter 1 for information about turning off AC and DC power.

Figure 3–3 System Bus Configurations According to Number of CPUs



❶ One CPU

❷ Two CPUs

❸ Three CPUs

❹ Four CPUs

Warning: CPU and memory modules have parts that operate at high temperatures. Wait two minutes after power is removed before handling these modules.

Memory Modules

The system can support up to four memory modules, for a maximum memory capacity of 2 GB. A minimum of one memory module is required.

Warning

Before installing a memory module, you should turn off all power to the system (both AC and DC). Refer to ''Powering Down the System'' in Chapter 1 for information about turning off AC and DC power.

Memory is available in 64-MB, 128-MB, and 512-MB variations. See the *Digital Systems and Options Catalog* for order numbers and configuration information or call 1-800-DIGITAL (U.S.A. and Canada) or your authorized Digital Partner for assistance.

External I/O

A CPU slot (system bus slot 1, CPU 2) can be substituted for additional I/O expansion.

Note

The external I/O module will be available on the model 4/275 system.

Standard I/O Module

The standard I/O module provides a standard set of I/O functions and is required in all systems. The standard I/O module resides in a dedicated slot (I/O) in the EISA/PCI bus card cage (see Figure 3–2).

To access the card cage, remove the left panel. Refer to Figure 2–2 and the accompanying text before removing the left panel. Be sure to reattach the panel screws before attempting to power up the system again.

Caution

Do not remove the left panel when the system is running. If you remove the left panel without first properly shutting down the system, the system will power down unexpectedly and you may lose data.

For information about installing a specific option, refer to the documentation for that option.

Warning

Before installing the standard I/O module, turn off all power to the system (both AC and DC). Refer to ‘‘Powering Down the System’’ in Chapter 1 for information about turning off AC and DC power.

EISA Bus Options

The EISA bus (Extended Industry Standard Architecture bus) is a 32-bit industry standard I/O bus. EISA is a superset of the well-established 16-bit ISA bus. EISA was designed to accept newer 32-bit components while still remaining compatible with older 8-bit and 16-bit cards.

With a bandwidth of 33 MB/sec, EISA is well suited to medium-performance options, such as modems, asynchronous communication controllers, and other miscellaneous peripherals. Up to eight EISA (or ISA) modules can reside in the EISA bus portion of the card cage. All slots are bus master slots. EISA slots can be filled in any order.

Figure 3–2 shows the location of EISA options on the card cage. To access the card cage, remove the left panel. Refer to Figure 2–2 and the accompanying instructions before removing the left panel. Be sure to reattach the panel screws before attempting to power up the system again.

Caution

Do not remove the left panel when the system is running. If you remove the left panel without first properly shutting down the system, the system will power down unexpectedly and you may lose data.

PCI Bus Options

For options that require high performance, a Peripheral Component Interconnect (PCI) bus is included in the AlphaServer 2100 system.

PCI is an industry-standard expansion I/O bus that is the preferred bus for high-performance I/O options, such as network interconnects (FDDI, Ethernet, Token Ring), storage interconnects (SCSI, Fast SCSI, IPI), and high-performance video applications. The AlphaServer 2100 system supports 32-bit PCI options.

The PCI bus is shown in Figure 3–2. There are three slots for 32-bit PCI options. A PCI board is shown in Figure 3–5.

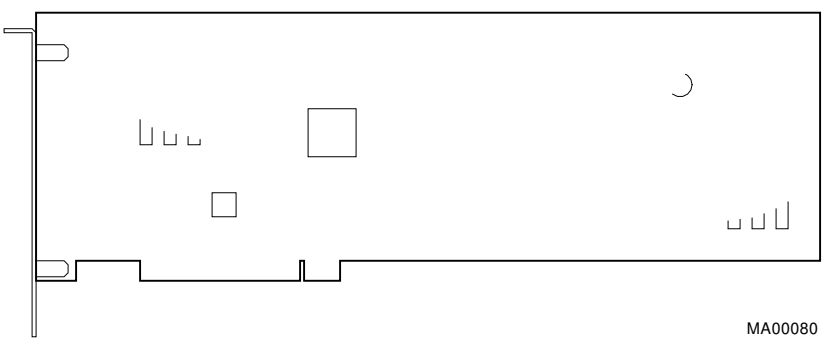



Figure 3–5 PCI Board