

# **Netra™ T1 AC200 Server**

# **Netra T1 DC200 Server**

## **Just the Facts**

(SunWIN token# 127549)

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# Positioning

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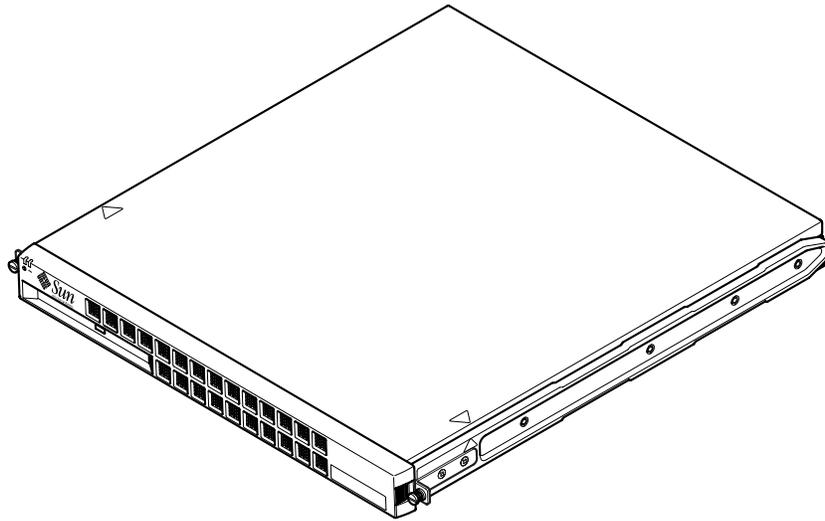


Figure 1. The Netra T1 Server

## Introduction

Sun is an established market leader in providing products for a wide range of network services to service providers (SPs). Sun's Netra™ server products are based on the robust, scalable SPARC™ architecture and Solaris™ Operating Environment, which provides customers with a single environment from development to service deployment on servers from 1 to 64 processors. Sun's open systems approach provides the stability, reliability, and outstanding price performance that SPs need.

ISP and Telco requirements are converging, creating an even larger market for carrier-grade products. The Netra T1 AC200 server and the Netra T1 DC200 server are the latest products in the Netra thin server family. The Netra T1 AC200 and Netra T1 DC200 servers allow service providers to leverage their SPARC architecture and Solaris Operating Environment experience to low-end functions.

The Netra product line offers a range of availability options. The very high availability level, in the form of fault-tolerance, is designed for mission-critical applications where constant service availability is the highest priority. Where space is at a premium, customers can rackmount Netra carrier-grade systems to gain the highest performance density. With this broad range of carrier-grade products, SPs can focus their expertise on providing services to the end user.

## Product Family Placement

The Netra T1 AC200 and Netra T1 DC200 servers are the next generation of low-end, rackmounted servers in the line that includes the Netra t1 server Models 100 and 105. The Netra T1 server has the following distinguishing key features:

- A lights out management (LOM) module that provides optimum availability through remote management of power status
- Front-accessible drives that provide easy access for service and maintenance



- A removable system configuration card that preserves host ID, open boot PROM settings, and MAC addresses
- A 1 RU form factor that enables Netra T1 servers to be densely packed into existing racks, lowering operating costs
- Support for industry standard 256 or 512 MB PC133 memory modules
- Two USB ports for high-speed peripherals interface

## Netra™ T1 Server and Netra t1 Server Feature Comparison

Feature	Netra T1 Server	Netra t1 Server
<b>Packaging</b>		
– Rackmounted	Yes	Yes
– Density/rack (72" rack)	32	32
<b>Disk</b>		
– Subsystem	SCSI	SCSI
– Accessibility	Front	Front
– Hot-pluggable	Yes	Yes
– Number	2	2
<b>Maximum memory</b>	2 GB	1 GB
<b>Base network connectivity</b>	2 Ethernet 10/100BASE-T ports	2 Ethernet 10/100BASE-T ports
<b>Lights out management (LOM)</b>	LOMLite2	LOMLite
<b>Expandability</b>	1 PCI slot, full length	1 PCI slot, 2/3 length
<b>Frame-buffer</b>	No	No
<b>Ports</b>		
– Keyboard	No	No
– Mouse	No	No
– Parallel	No	No
– USB	2	No

## Key Messages

The Netra T1 server is a low-cost, full-fledged, single-processor server with a 1 RU form factor. The Netra T1 server was conceived, designed, and developed as a server in direct response to service provider needs and input. Key messages include the following:

- **Open systems architecture**

Netra T1 servers incorporate industry standard, open systems architecture and were designed specifically for the service provider market.

- **SPARC and Solaris compatibility**

The Solaris Operating Environment is a stable environment which is scalable, reliable, and provides a single environment from development to service deployment on servers with from 1 to 64 processors.



- **High availability features**

Key features that help enable availability include hot-pluggable disks, lights out management (LOM)—a module that allows administrators to monitor fans, temperatures, and power supply and manage power status remotely—and automatic server restart (ASR).

Netra T1 server provides an economical approach to deploying services redundantly. The Netra T1 server's small size and low cost allow the product to be used for redundant deployment for higher availability.

- **Competitive price/performance**

Standard components keep product cost low while the overall features reduce operating costs.

- **Hot-pluggable drives**

Drives can be removed easily for repair or maintenance without system interruption.

- **Density**

High density servers decrease operating costs by using data center space more efficiently; other products require deeper racks. The Netra T1 server has been developed to maximize CPU density while maintaining the smallest possible footprint (19-inches deep by 17-inches wide).

- **Familiarity**

The Netra T1 server allows service providers to leverage their SPARC architecture and Solaris Operating Environment experience and applications to low-end functions. The Netra T1 server makes it possible for customers to standardize on a single operating system for their operating environment.

- **Quick Deployment**

Because the Netra T1 server can be installed in less than 20 minutes, services can be up and running equally fast.

## Availability

The Netra T1 AC200 server will be generally available in January. The Netra T1 DC200 server will be generally available three months later. Launch date is January 2001.

## Target Users

The Netra T1 server is designed for providers (for example, service providers including telecommunications carriers) who require high density, availability, serviceability, and manageability in an affordable, complete product.

## Target Markets

The Netra T1 server is being targeted at the service provider market including telecommunications carriers. Other potential target markets include industries requiring rackmounted, small computers. Netra T1 servers can be used as MIS-supported local file servers deployed in network closets and/or racks and as the platform to run small e-business services.



Industry/Customer	Key Features to Highlight
Service provider (SP)	<ul style="list-style-type: none"> <li>• High system count per rack</li> <li>• Dependable Sun™ hardware</li> <li>• Horizontal scalability: availability, flexibility</li> <li>• Manageability</li> <li>• Serviceability</li> <li>• True server functionality at a competitive price</li> </ul>
Telecommunications carriers	<ul style="list-style-type: none"> <li>• Compliant with Telcordia NEBS standards</li> <li>• Highly reliable and available</li> <li>• Robust SPARC and Solaris architecture</li> </ul>



# Selling Highlights

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## Market Value Proposition

Netra T1 servers provide the following features:

- **User-initiated product design**

The Netra T1 server was conceived, designed, and developed specifically as a server in response to input from service providers.

- **High density**

The Netra T1 server is a high density (1 RU form factor), high performance, rackmount server. High-density servers decrease operating costs by using existing data center space more efficiently.

- **Robust SPARC and Solaris architecture**

With the Netra T1 server, service providers including telecommunications carriers can expand their current service offerings to their clients with the robust SPARC and Solaris platform architecture.

- **Availability**

The Netra T1 server is built on the stable SPARC and Solaris platform and is designed with carrier-grade packaging for environments where service availability is critical.

- **Reliability**

The Netra T1 server provides standard SPARC and Solaris platform reliability that is well established in the SP market.

- **Affordability**

The Netra T1 server has been designed to use standard components in order to offer an affordable SPARC and Solaris server with carrier-grade features at no extra cost.

- **Serviceability**

The Netra T1 server was designed with a front accessible system configuration card making system replacement easy.

- **General-purpose server**

For customers who require flexible, low-cost systems with high levels of uptime, manageability, and horizontal scalability, Netra T1 servers are a fully supported, cost effective alternative to Intel-based (Windows and Linux) platforms.

## Applications

The Netra T1 server is designed to meet service providers' requirements for compact size, reliability, and manageability. The Netra T1 server can be deployed as a dedicated platform for both infrastructure (utility) and revenue services.

Infrastructure services are those services that service providers have to provide to run their businesses. Examples of infrastructure services include:

- Firewalls
- DNS (domain name system)
- Log processing
- Authentication



- Mail-relay
- Distributed SNMP (simple network management protocol)
- Front-end Web server

Revenue services are those services for which service providers can collect payment from clients. Examples of revenue services include:

- Web server
- Hosting server
- Application server

The Netra T1 server's small size and low price make it an ideal platform for use in a redundant server array for these services. Netra T1 servers can also be used for Tier 1 applications; for example, load balancing. They can also be used as general-purpose servers.

## Compatibility

The Netra T1 server comes preinstalled with Solaris 8 Operating Environment (10/00) Update 2. The Netra T1 server is compatible with a wide range of SPARC and Solaris applications. For a complete list of Sun products or products from third-party vendors, refer to the following sites:

- Sun internal Web site at <http://sp.eng/products/hardware/netra/t1>
- Sun Reseller Web site at <http://reseller.sun.com>
- Sun external Web site at <http://www.sun.com/products-n-solutions>



# Enabling Technology

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## Netra T1 Server Architecture

Netra T1 server components were designed to meet the reliability, availability, and serviceability needs required by service providers including telecommunications carriers. The Netra T1 server has the following architectural features:

- Two built-in Ethernet 10/100BASE-T ports
- Two serial ports: TTY-A, referred to as the console/LOM port, and TTY-B
- Hot-pluggable, front-accessible SCSI disks
- Two USB ports
- Support for industry-standard DIMMs
- Removable system configuration card
- System configuration card reader

## Form Factor

The Netra T1 server was specifically designed in response to service provider space constraints.

- Thin form factor—1 RU (1.75 inches)
- Package includes a rackmounting kit with rails. The racking system was designed specifically as part of the Netra T1 server and uses no vertical rack space

## LOM and Alarms

The Netra T1 server has an extensive alarm and warning system that is a standard part of the system, allowing administrators to detect and respond to problems quickly onsite or remotely. The Netra T1 server's key distinguishing feature is its lights out management (LOM) module. These features include a command-line interface, API compatibility, and simplicity.

- **Lights out management (LOM)**

With the LOM module, the Netra T1 server can be configured to allow administrators to monitor the system board, fan power/rpm, and temperature via a dedicated LOM serial port, combined console/LOM serial port, or alarm software that can be tied into SNMP. The LOM module also has a remote power on/off and power cycle.

- **Automatic server restart (ASR)**

ASR is a daemon that reduces downtime by enabling administrators to configure the Netra T1 server to restart automatically in case of a software lock-up.

## Convenient Utility Features

- The Netra T1 server chassis has indicator lights (power on and warning lights) and Ethernet link status lights located on the front and back.
- A fault indicator light stays on even when the power is off if there has been a fault (assuming the system is still plugged in).



- Built-in RJ-45 connectors for serial ports that are compatible with Cisco terminal servers allow the Netra T1 server to be connected easily without adapters. A standard straight through Category 5 cable can be used.
- The system configuration card is designed to be pulled out manually, making system replacement easy without affecting software that is system ID bound.
- Cable hooks on the back of the chassis keep things organized and keep cables away from the ventilation holes.
- A label area on the front panel provides an area for identifying the server name or function.
- Remote power on/off capabilities.
- Serial numbers are viewable from the rear when the server is in the rack.

## Quick Deployment

The Netra T1 server can be deployed from out of the box and into the rack, powered and online (networked) in less than 20 minutes.



# System Architecture

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## Overview

The Netra T1 server is a 19-inch, rackmounted, low-profile, competitively priced SPARC and Solaris server with a 1U form factor.

### Features

- 1 RU rackmount design
- 500-MHz processor
- Remote monitoring and manageability with lights-out management (LOM) software
- Designed for serviceability
- Up to 2-GB memory
- Support for up to 36-GB (2 x 18-GB), hot-pluggable, SCSI, low-profile disks
- Optional 24X CD-ROM drive
- System configuration card that contains the system's configuration, host ID, MAC address, and open boot PROM settings
- Designed with carrier-grade features

### Benefits

- Small form factor enables multiple systems to be densely packed into existing racks, reducing operating costs by efficiently using data center floor space
- Small size allows redundant deployment, increasing overall service availability
- Sun performance—no penalty for small packaging
- Detects and addresses problems faster with fewer resources, reducing downtime and maximizing availability
- Major component-level FRUs
- Faults contained to a single system; replacing one complete system minimizes the potential of a fault propagating due to system or operator error and impacting other systems
- Large memory capacity allows large applications to be run in memory, increasing performance
- Large drive provides higher availability for mirroring
- CD-ROM can be used to boot a custom Solaris CD image, providing a reliable, solid, fail-safe, noncorruptible file system—can help remove downtime problems due to failed disk drives
- Swap a faulty server with a replacement without reconfiguration
- Helps enable Netra T1 servers to tolerate the extremes of temperature and humidity, to withstand earthquakes (vibrations), to operate in environments where there is dust or other pollutants/air contaminants, to resist/retard fire and other electrical hazards



# Reliability, Availability, and Serviceability (RAS)

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## Reliability

The Netra T1 server is based on Sun's carrier-grade, SPARC and Solaris platform reliability that is well established in the service provider market.

## Availability

- The Netra T1 server's low cost and small form factor allow redundant deployment in a compact space to increase overall service availability.
- Maximum availability is provided with features such as lights out management (LOM), automatic server restart (ASR), and hot-pluggable disks.
- Drives are front accessible for ease of service and maintenance. Hot-swap is supported when running a volume manager.
- Service providers can have a separate service per server and provide more services within the same footprint. This eliminates sharing servers and increases availability if the system goes down—only one server would be affected.

## Serviceability

- Drives are front accessible for ease of service and maintenance. Hot-swap is supported when running a volume manager.
- The Netra T1 server's major level FRU components include the system disk, CD-ROM, and memory. Also, the entire server can be replaced by using the system configuration card.
- The system configuration card can be swapped easily by pulling out the card and replacing it without removing the cover. No special tools are required.
- The LOM module allows administrators to monitor and manage power status at the sub-board level remotely. With the ASR feature, administrators can configure the Netra T1 server to restart automatically.
- Indicator lights on the front and back of the chassis allow problems to be detected and isolated easily.
- A fault indicator light stays on following a fault even if the system has been powered off.
- Rear power switch provides easy access.
- Rackmount slides are included for easy installation and removal of a unit.



# Requirements and Configuration

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## System Requirements

The Netra T1 server comes configured with a minimum of 256 MB of memory. An ANSI console device is needed.

## System Configuration

Up to 32 Netra T1 servers can be stacked in a standard 72-inch rack. The Netra T1 server has the following components:

- 19-inch rackmount kit
- Two serial ports (one console/LOM)
- One U/W SCSI bus
- One full-length PCI expansion slot
- AC or DC power supply
- Solaris 8 Operating Environment (10/00) Update 2, LOM, and patches are pre-installed
- System configuration card and reader
- Two USB ports
- Two 10/100BASE-T Ethernet ports

The table below details the configuration specifications.

Feature	Specification
Processor	500 MHz UltraSPARC™-III
Memory (standard PC100)	256 MB–2 GB memory
Operating environment	Solaris 8 Operating Environment (10/00 or higher)
Disks	Two 18 GB SCSI
Cache	256 KB
PCI expansion	One slot, full length
Ethernet	Dual 10/100
USB	Two ports
Dimensions	19.2" deep x 17.2" wide x 1 U height

The following components are available as options:

- Internal 24X CD-ROM drive
- 18-GB, 10000-rpm low-profile drive
- Memory can be added up to 2-GB using 256-MB and 512-MB DIMMs

## Licensing/Usage

The Netra T1 server comes complete with a server license.



## Interconnect

The Netra T1 server is designed to be a headless server, therefore there is no parallel port, keyboard, or mouse.

The Netra T1 server comes standard with two Ethernet 10/100BASE-T ports without having to use the PCI expansion slot.

The following I/O cards (NEBS Level 3 certified) will be available initially:

- Quad FastEthernet
- Gigabit Ethernet
- SunSwift™ FastEthernet U/W SCSI combo
- ATM 155MMF
- ATM 155UTP
- FC-AL
- Fresh Choice
- Fresh Choice Lite
- HSI
- GBE/FCAL combo
- SAI
- Dual Channel Diff Ultra-SCSI
- ISP 2100F FCAL

## Processor Options

<b>Architecture</b>	UltraSPARC™ IIe superscalar processor: 64-bit single processor, 500MHz
<b>Cache</b>	<ul style="list-style-type: none"><li>• 16-KB data and 16-KB instruction on chip</li><li>• Secondary: 256 KB internal</li></ul>
<b>Main Memory</b>	<ul style="list-style-type: none"><li>• Two 256 or 512 MB PC133 DIMMs</li><li>• 2 GB memory max per system</li></ul>

## Standard Interfaces

<b>Network</b>	Dual Ethernet/Fast Ethernet (10/100BASE-T)
<b>I/O</b>	40 MB/sec. UltraSCSI (SCSI-3) (synchronous)
<b>Expansion Bus</b>	Single full length PCI slot compliant with PCI specification version 2.1; slot operates at 33 MHz, 32 bits

## Mass Storage and Media

<b>Internal CD</b>	Optional 644-MB slimline CD-ROM drive; 24X speed
<b>Disk</b>	Up to two 3.5 x 1-in. disks (18GB); disk bays are front accessible and support hot-plug
<b>External Storage</b>	All UltraSCSI devices



## Software

<b>Operating Environment</b>	Solaris 8 Operating Environment (10/00 or higher)
<b>Languages</b>	C, C++, Pascal, FORTRAN, Java™, all standard Sun-supported languages
<b>Networking</b>	ONC™, NFS, TCP/IP, SunLink™ OSI, MHS, IPX™/SPX, DCE, SS7, ATM, FDDI

## Chassis Dimension and Weight

	<b>U.S.</b>	<b>Metric</b>
<b>Height</b>	1.73 in.	44.0 mm
<b>Width (without mounting ears)</b>	17.21 in.	437.2 mm
<b>Depth (with front bezel)</b>	19.19 in.	487.4 mm
<b>Weight</b>	20 lbs. (approx.)	9 kg (approx.)
<b>Shipping Weight (product and packing)</b>	25 lbs. (approx.)	11.5 kg (approx.)

## Environment

The Netra T1 server is designed to meet the following requirements:

### Power Requirements

	<b>U.S.</b>	<b>International</b>
<b>Operating</b>	90–264V AC 47–63 Hz	90–264V AC 47–63 Hz
<b>Tolerance</b>		

### Temperature

	<b>Fahrenheit</b>	<b>Celsius</b>
<b>Operating</b>	41° to 104°	5° to 40°
<b>Nonoperating</b>	–40° to 158°	–40 to 70°

### Humidity (Noncondensing)

<b>Operating</b>	5% to 90% relative humidity, noncondensing, subject to a maximum absolute humidity of 0.024 kg water/kg dry air
<b>Nonoperating</b>	10% to 95% relative humidity, noncondensing

### Seismic

GR–63–CORE requirements for earthquake risk zone 4
ETSI ETS 300–19–2–3, A1 operating requirements



## Noise (in accordance with ISO 9296)

<b>Operating acoustic noise</b>	Less than 65 dBA (GR-63-CORE Test Method)
<b>Idling acoustic noise</b>	(Information unavailable)

## Regulations

The Netra T1 server meets or exceeds the following requirements:

<b>Safety</b>	UL 1950 (3rd edition), EN60950, GR-1089-CORE
<b>Emissions</b>	GR-1089-CORE, EN55022 Class A, FCC Class A
<b>Immunity</b>	EN 50082-1 (89/336/EEC); GR-1089-CORE
<b>Telco environment</b> <ul style="list-style-type: none"><li>• <b>Telcordia</b></li></ul>	Telcordia: GR-63-CORE, FR-1089-CORE, TR-NWT-000295 (pending) <ul style="list-style-type: none"><li>• SR 3580 NEBS Level 3 (pending)</li></ul>
<b>Certification</b> <ul style="list-style-type: none"><li>• Safety</li><li>• EMC</li></ul>	<ul style="list-style-type: none"><li>• cULus Mark, TUV GS Mark, CE Mark</li><li>• CE Mark (93/68/EEC), FCC authorized Class A</li></ul>



# System Management

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## System Administration

The Netra T1 server's features were designed for ease of administration. Two Ethernet 10/100BASE-T ports come standard with Netra T1 servers. The lights out management feature with automatic server restart function allows system administrators to locate and resolve problems quickly, either onsite or remotely.

## Standards/Conformance and Performance Statistics/Benchmarks

For standards/conformance information and for statistics on maximum availability (mean time between failures) and performance benchmarks such as SPECint95, SPECfp95, and SPECWeb99, refer to the following Web sites:

- Sun internal Web site at <http://sp.eng/products/hardware/netra/t1>
- Sun Reseller Web site at <http://reseller.com>
- Sun external Web site at <http://www.sun.com/products-n-solutions/hw/networking/netrat/t1>

## Operating Environment

The Netra T1 server comes with the Solaris 8 Operating Environment and LOM software pre-installed. For information about upgrades and updates, refer to the following Web sites:

- Sun internal Web site at <http://sp.eng/products/hardware/netra/t1>
- Sun Reseller Web site at <http://reseller.com>
- Sun external Web site at <http://www.sun.com/products-n-solutions/hw/networking/netrat/t1>



# Ordering Information

Netra T1 servers are sold in single units. Orders take three days to process, two days to deliver.

Order Number	Title and Description
N21AUPE1-9S-256AT1	AC, 500 MHz, 1 x 256 MB DIMM, 1 x 18 GB hard drive
N21AUPE1-9S-512AT1	AC, 500 MHz, 2 x 256 MB DIMM, 1 x 18 GB hard drive
N21AUPE1-9S-102AT1	AC, 500 MHz, 2 x 512 MB DIMM, 2 x 18 GB hard drive
N21DUPE1-9S-256AT1	DC, 500 MHz, 1 x 256 MB DIMM, 1x 18 GB hard drive (available Q2CY01)

## Optional Components

X-option number	X-options
X7085	19-inch rack-mount kit
X6966A	23-inch rack-mount kit
X6967A	24-inch rack-mount kit
X6968A	600mm rack-mount kit
X7088A	Internal CD-ROM drive
X6157A	External SCSI CD-ROM drive
X7077A	Lights-Out Management software CD
X5237A	18 Gbyte, 10K RPM hard disk
X7091A	256 Mbyte DIMM
X7092A	512 Mbyte DIMM
X6973A	5-pack serial port adapter
X1141A	Gigabit Ethernet /P2.0 PCI card
X1032A	Fresh Choice PCI card
X1033A	Fresh Choice Lite
X1033A	FastEthernet/P2.0 PCI card
X1034A	Quad Fast Ethernet (QFE) PCI card
X1155A	HSI PCI card
X1157A	ATM PCI card (155 MMF)



<b>X-option number</b>	<b>X-options</b>
<b>X1158A</b>	ATM PCI card (155 UTP)
<b>X6541A</b>	Ultra™ SCSI Differential Controller PCI card
<b>X2156A</b>	SAI PCI card
<b>X6729A</b>	ISP 2100F FCAL PCI card
<b>X2069A</b>	GBE/FCAL Combo card

## Field Replaceable Units

The following field replaceable units (FRUs) are available for the Netra T1 servers. Customers can choose to have hot standby servers and use the system configuration card feature or replace individual components.

<b>FRU Part Number</b>	<b>Field Replaceable Units (FRUs)</b>
<b>375-0132</b>	Motherboard
<b>370-4278</b>	CD-ROM and paddle board
<b>540-4177</b>	18 Gbyte hard disk drive
<b>370-4290</b>	LED/SmartCard Reader
<b>300-1488</b>	AC Power Supply
<b>300-1489</b>	DC Power Supply
<b>370-4284</b>	Rear Fan
<b>370-4237</b>	256 Mbyte Reg/Buffered DIMM
<b>370-4281</b>	512 Mbyte Reg/Buffered DIMM
<b>100-6889</b>	NVRAM
<b>370-4285</b>	System Configuration Card
<b>370-4352</b>	Impingement Fan

## Upgrade Paths

The following items can be upgraded:

- Service and support plan
- Memory and system upgrade programs are being developed and will follow General Availability

Existing Netra t1 server customers may upgrade to Netra T1 servers under the Sun Upgrade Allowance Program (Sun UAP). This program allows customers to protect their current investment by receiving value for the trade-in of the Netra t1 server. Refer to the Worldwide Configuration Guide at [http://rocknroll.corp/Configuration\\_Guide/](http://rocknroll.corp/Configuration_Guide/) for more details on Sun UAP, upgrade paths, and allowances.



# Service and Support

The SunSpectrum<sup>SM</sup> program is an innovative and flexible service offering that allows customers to choose the level of service best suited to their needs, ranging from mission-critical support for maximum solution availability to backup assistance for self-support customers. The SunSpectrum program provides a simple pricing structure in which a single fee covers support for an entire system, including related hardware and peripherals, the Solaris Operating Environment software, and telephone support for Sun software packages. The majority of Sun's customers today take advantage of the SunSpectrum program, underscoring the value that it represents. Customers should check with their local Sun Enterprise<sup>TM</sup> Services representatives for program and feature availability in their areas.

FEATURE	SUNSPECTRUM PLATINUM <sup>SM</sup> Mission-critical Support	SUNSPECTRUM GOLD <sup>SM</sup> Business-critical Support	SUNSPECTRUM SILVER <sup>SM</sup> Systems Support	SUNSPECTRUM BRONZE <sup>SM</sup> Self Support
<b>Systems Features</b>				
Systems approach coverage	Yes	Yes	Yes	Yes
System availability guarantee	Customized	No	No	No
<b>Account Support Features</b>				
Service account management team	Yes	No	No	No
Personal technical account support	Yes	Yes	No	No
Account support plan	Yes	Yes	No	No
Software release planning	Yes	No	No	No
On-site account reviews	Monthly	Semiannual	No	No
Site activity log	Yes	Yes	No	No
<b>Coverage / Response Time</b>				
Standard telephone coverage hours	7 day/24 hour	7 day/24 hour	8 a.m.–8 p.m., Monday–Friday	8 a.m.–5 p.m., Monday–Friday
Standard on-site coverage hours	7 day/24 hour	8 a.m.–8 p.m., Monday–Friday	8 a.m.–5 p.m., Monday–Friday	N/A
7-day/24-hour telephone coverage	Yes	Yes	Option	No
7-day/24-hour on-site coverage	Yes	Option	Option	N/A
Customer-defined priority setting	Yes	Yes	Yes	No
• Urgent (phone/on-site)	Live transfer/ 2 hour	Live transfer/ 4 hour	Live transfer/ 4 hour	4 hour / N/A
• Serious (phone/on-site)	Live transfer/ 4 hour	2 hour/next day	2 hour/next day	4 hour / N/A
• Not critical (phone/on-site)	Live transfer/ customer convenience	4 hour/ customer convenience	4 hour/ customer convenience	4 hour / N/A
Additional contacts	Option	Option	Option	Option
<b>Enhanced Support Features</b>				
Mission-critical support team	Yes	Yes	No	No



FEATURE	SUNSPECTRUM PLATINUM <sup>SM</sup> Mission-critical Support	SUNSPECTRUM GOLD <sup>SM</sup> Business-critical Support	SUNSPECTRUM SILVER <sup>SM</sup> Systems Support	SUNSPECTRUM BRONZE <sup>SM</sup> Self Support
Sun Vendor Integration Program (SunVIP <sup>SM</sup> )	Yes	Yes	No	No
Software patch management assistance	Yes	No	No	No
Field change order (FCO) management assistance	Yes	No	No	No
<b>Remote Systems Diagnostics</b>				
Remote dial-in analysis	Yes	Yes	Yes	Yes
Remote systems monitoring	Yes	Yes	No	No
Remote predictive failure reporting	Yes	Yes	No	No
<b>Software Enhancements and Maintenance Releases</b>				
Solaris enhancement releases	Yes	Yes	Yes	Yes
Patches and maintenance releases	Yes	Yes	Yes	Yes
Sun unbundled software enhancements	Option	Option	Option	Option
<b>Internet and CD-ROM Support Tools</b>				
SunSolve <sup>SM</sup> license	Yes	Yes	Yes	Yes
SunSolve EarlyNotifier <sup>SM</sup> Service	Yes	Yes	Yes	Yes

## Warranty

Standard one-year return-to-depot (15-day turnaround).



# Glossary

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1 RU	One rack unit as defined by the Electronic Industries Alliances (EIA). A vertical measurement equal to 1.75 inches.
AC	Alternating current.
ASR	Automatic server restart. A feature of the LOM module that reduces downtime from system lock-up. ASR enables administrators to configure the server to restart automatically in case of a software lock-up.
ATM	Asynchronous transfer mode. ATM is a network technology that supports realtime voice, video, and data. ATM is used as a backbone technology by major enterprises and ISPs.
Carrier grade	Ruggedized, rackmountable systems with features including remote alarm capabilities, front-back cooling, front accessibility of media, rear cabling, and rugged NEBS-compliant packaging.
Commodity server	A server that is replaced when it fails, instead of being repaired.
Density	Number of units in a given amount of space.
Ecache	External cache. Memory cache external to the CPU chip, also referred to as L2 cache.
Ethernet 10/100BASE-T	The most widely used LAN access method defined by the IEEE 802.3 standard; uses standard RJ-45 connectors and telephone wire. 100BASE-T is also referred to as Fast Ethernet.
FC-AL	Fibre channel arbitrated loop. A topology for Fibre Channel in which all devices are linked together in a loop.
Gigabit Ethernet	An Ethernet technology with transmission speeds up to 1 Gbps.
Horizontal scalability	Increasing throughput and reliability by running the same service on several machines at the same time. Any applications run in a horizontally scaled configuration must be stateless.
Host ID	The unique identifier assigned to the host computer.
Hot-pluggable	A feature that allows an administrator to remove a drive without affecting hardware system integrity.
Hot-swappable	A feature that allows an administrator to remove and/or replace a device without affecting software integrity. This means that, while the system does not need to be rebooted, the new component is not automatically recognized by the system.
Infrastructure services	Services that an SP runs to provide revenue services to clients. Examples include: firewalls, DNS, log processing, authentication, mail-relay, distributed SNMP, and low-end cache server.
I/O	Input/output. Transferring data between the CPU and any peripherals.
ISP	Internet service provider.
L2 cache	See Ecache.
LOM	Lights out management. A service and availability feature that monitors the system board, fan power and rpm, and temperature via a dedicated LOM serial port, combined console/LOM serial port, or alarm software that can be tied into SNMP. The LOM module also has a remote power on/off and cycle.



MTBF	Mean time between failures. The average time a component works without failure.
MTTR	Mean time to repair. The average time it takes to repair a component.
NEBS	Network Equipment Building Standard. A stringent standard for durability, grounding cables, and hardware interfaces specified by Telcordia Technologies (formerly Bellcore) for equipment used in Telco central offices.
NEPs	Network equipment providers.
NSPs	Network service providers.
RAM	Random access memory.
Revenue services	Services for which an SP can collect payment from clients. Examples include: low-end web server, low-end hosting server, and application server.
SCSI	Small computer systems interface. Pronounced “scuzzy.” A hardware interface that allows the connection of up to 15 peripheral devices to a single bus.
SPECint95	A benchmark for integer performance.
SPECfp95	A benchmark for floating point performance.
SPECWeb99	A benchmark for web performance.
SP	Service provider.
Sun Quad FastEthernet™	A Sun product that has four Fast Ethernet ports on the same I/O card.
TTY A	A serial port. Referred to as the console/LOM port.
TTY B	A serial port.



# Materials Abstract

All materials will be available on SunWIN except where noted otherwise.

Collateral (cont.)	Description	Purpose	Distribution	Token # or COMAC Order #
<b>Powerpack</b>				
<ul style="list-style-type: none"> <li>• <i>Netra T1 AC200 and Netra T1 DC200 Server Just the Facts</i></li> </ul>	Reference Guide for the Netra T1 AC200 Server and Netra T1 DC200 Server (this document)	Training Sales Tool	SunWIN, Reseller Web	XXXXXX
<b>References</b>				
<ul style="list-style-type: none"> <li>• <i>Netra t Telecommunications Server Family</i></li> </ul>	Quick Reference Card	Sales Tool, Training	SunWIN	75091
<ul style="list-style-type: none"> <li>• <i>Transition of Netra t, 6/30/98</i></li> </ul>	Sun Product Intro	Sales Tool, Training	SunWIN	88736
<b>Product Literature</b>				
<ul style="list-style-type: none"> <li>• <i>Netra T1 AC200/DC200 Server Data Sheet</i></li> </ul>	Data Sheet	Sales Tool, Training	SunWIN	XXXXXX
<b>External Web Site</b>				
<ul style="list-style-type: none"> <li>• <i>Netra T1 AC200/DC200 Server Web Site</i></li> </ul>	<a href="http://www.sun.com/products-n-solutions/hw/networking/netrat/t1">http://www.sun.com/products-n-solutions/hw/networking/netrat/t1</a>			
<b>Internal Web Site</b>				
<ul style="list-style-type: none"> <li>• <i>Netra Internal Web Site</i></li> </ul>	<a href="http://netropolis.eng/netrat/t1">http://netropolis.eng/netrat/t1</a>			
<b>Reseller Web Site</b>				
<ul style="list-style-type: none"> <li>• <i>Sun Reseller General Information</i></li> </ul>	<a href="http://reseller.sun.com">http://reseller.sun.com</a>			

