

Netra™ 120 Server

Just the Facts

(SunWIN token# 329880)



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Positioning



Figure 1. The Netra 120 server

Introduction

Sun is an established market leader in providing products for a wide range of network services to telecommunication carriers and government institutions. Sun's Netra™ server products are based on the robust, scalable SPARC™ architecture and Solaris™ Operating Environment, which provide customers with a single environment from development to service deployment on servers from 1 to 106 processors. Sun's open systems approach provides the stability, reliability, and outstanding price performance that telcos and government institutions need.

A large market for carrier-grade products exists in the telco and government industries. The Netra™ 120 server is the latest product in the Netra thin server family. The Netra 120 server allows telecommunication carriers and government agencies to leverage their SPARC architecture and Solaris Operating Environment experience to low-end functions.

The Netra 120 server's NEBS Level 3 certification offers extremely high levels of reliability. The Netra 120 server ships with NEBS features that certify the fire-proof and fire-resistant enclosure to withstand Zone 4 earthquakes, operate within compliant levels of EMI and ESD, and to operate in environments with high ambient temperature, high humidity, and airborne contaminants.

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

Product Family Placement

The Netra 120 server is the next generation of low-end, rackmounted servers in the line that includes the Netra t1 server Model 100 and Netra T1 DC200 server. The Netra 120 server has the following distinguishing key features:

- NEBS Level 3 certification
- 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 120 servers to be densely packed into existing racks, lowering operating costs
- Support for industry standard 256-MB, 512-MB, or 1-GB PC133 memory modules
- Two USB ports for high-speed peripherals interface

The Netra 120 server is the NEBS-certified, DC power version of the Sun Fire™ V120 server.

Netra™ 120 Server, Netra AC 200 Server, and Netra t1 Server Feature Comparison

Feature	Netra 120 Server	Netra T1 DC200 Server	Netra t1 100/105 Server
Packaging			
– Rackmounted	Yes	Yes	Yes
– Density/rack (72" rack)	32	32	32
Disk			
– Subsystem	SCSI	SCSI	SCSI
– Accessibility	Front	Front	Front
– Hot-pluggable	Yes	Yes	Yes
– Number	2	2	2
Processor	650-MHz	500-MHz	360-MHz or 440-MHz
Cache	512-KB (Level 2)	256-KB (Level 2)	16-KB (Level 1)
Maximum memory	4-GB	2-GB	1-GB
Base network connectivity	2 Ethernet 10/100BASE-T ports	2 Ethernet 10/100BASE-T ports	2 Ethernet 10/100BASE-T ports
Lights out management (LOM)	LOMLite2	LOMLite2	LOMLite
Expandability	1 PCI slot, full length	1 PCI slot, full length	1 PCI slot, 2/3 length
Frame-buffer	No	No	No
Ports			
– Keyboard	No	No	No
– Mouse	No	No	No
– Parallel	No	No	No
– USB	2	2	No

Key Messages

The Netra 120 server is a low-cost, full-fledged, single-processor server with a 1 RU form factor. Key messages include the following:

- **NEBS Level 3 certification**
NEBS Level 3 certification ensures operability even in extreme environmental conditions.
- **Open systems architecture**
Netra 120 servers incorporate industry standard, open systems architecture and were designed specifically for the service provider, telco, and government 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 containing from 1 to 106 processors.

- **High availability features**

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

The Netra 120 server's small size and low cost provides an economical approach to deploying services redundantly.

- **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 120 server has been developed to maximize CPU density while maintaining the smallest possible footprint (19-inches deep by 17-inches wide).

- **Familiarity**

The Netra 120 server allows existing customers to leverage their SPARC architecture and Solaris Operating Environment experience and applications to low-end functions. The Netra 120 server makes it possible for customers to standardize on a single operating system for their operating environment.

- **Quick deployment**

Because the Netra 120 server can be installed in less than 20 minutes, services can be up and running equally fast.

Availability

The Netra 120 server will be generally available in June. Launch date was June 2002.

Target Users

The Netra 120 server is designed for customers who require high density, availability, serviceability, manageability, and reliability in a DC-powered, 1 RU high, affordable server.

Target Markets

The Netra 120 server is being targeted at telecommunications carriers and government and/or military facilities. Netra 120 servers can be used as MIS-supported local file servers deployed in network closets and/or racks and as the foundation to run small ebusiness services.

Target Industries

- Service providers
- Telecommunication carriers
- Government

- Military

The following are key features to highlight for these industries:

- Designed to provide continued operation in high humidity, 0–50°C, earthquake Zone 4
- Highly reliable and available
- Robust SPARC and Solaris architecture
- Compact footprint with shallow depth
- Manageability
- Serviceability

Selling Highlights

Market Value Proposition

Netra 120 servers provide the following features:

- **High density**

The Netra 120 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 120 server, telecommunications carriers can expand their current service offerings to their clients with the robust SPARC and Solaris platform architecture.

- **Availability**

The Netra 120 server is built on the stable SPARC and Solaris platform and is designed with ruggedized packaging for environments where service availability is critical.

- **Reliability**

The Netra 120 server provides standard SPARC and Solaris platform reliability that is well established in the SP market.

- **Affordability**

The Netra 120 server has been designed to use standard components in order to offer an affordable SPARC and Solaris server with ruggedized features at no extra cost.

- **Serviceability**

The Netra 120 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 120 servers are a fully supported, cost-effective alternative to Intel-based (Windows and Linux) platforms.

Applications

The Netra 120 server is designed to meet service provider, telco, and government requirements for compact size, reliability, and manageability. The Netra 120 server can be deployed as a dedicated platform for both infrastructure (utility) and revenue services.

Infrastructure services are those services that organizations 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 organizations can collect payment from clients. Examples of revenue services include providing:

- Web content
- Web hosting
- Applications

The Netra 120 server's small size and low price make it an ideal platform for use in a redundant server array for these services. Netra 120 servers can also be used for Tier 1 applications; for example, load balancing. They can also be used as general-purpose servers. Netra 120 servers are well suited for telecommunication applications such as signaling gateways, wireless short messaging services, and media gateways.

Compatibility

The Netra 120 server comes preinstalled with Solaris 8 Operating Environment (10/01) Update 6. The Netra 120 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 site:

- Sun external Web site at <http://www.sun.com/nebs/120>

Enabling Technology

Netra 120 Server Architecture

Netra 120 server components were designed to meet the reliability, availability, and serviceability needs required by telecommunications carriers and government facilities. The Netra 120 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 120 server has a compact form factor that fits in most industry standard racks.

- 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 120 server and uses no vertical rack space

LOM and Alarms

The Netra 120 server comes standard with an extensive alarm and warning system, allowing administrators to detect and respond to problems quickly, onsite or remotely. The Netra 120 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 120 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 cycle.

- **Automatic server restart (ASR)**

ASR is a daemon that reduces downtime by enabling administrators to configure the Netra 120 server to restart automatically in case of a software lock-up.

Convenient Utility Features

- The Netra 120 server chassis has indicator lights (power on and warning lights) and Ethernet link status lights which are located on the front and back.
- A fault indicator light stays on in the event of a fault even if there is no power (assuming the system is still plugged in).

- 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.
- The Netra 120 server has remote power on/off capabilities.
- Serial numbers are viewable from the rear when the server is in the rack.

Quick Deployment

The Netra 120 server can be deployed from out of the box and into the rack, powered and online (networked) in less than 20 minutes.

System Architecture

Overview

The Netra 120 server is a 19-inch, rackmounted, low-profile, competitively priced SPARC and Solaris server with a 1 RU form factor.

Feature	Benefit
NEBS Level 3 certification	<ul style="list-style-type: none">• Netra 120 servers have passed tests showing that they can tolerate the extremes of temperature and humidity, withstand earthquakes (vibrations), operate in environments where there is dust or other pollutants/air contaminants, resist/retard fire and other electrical hazards
1 RU rackmount design	<ul style="list-style-type: none">• 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
650-MHz processor	<ul style="list-style-type: none">• Sun performance—no penalty for small packaging
Remote monitoring and manageability with lights-out management (LOM) software	<ul style="list-style-type: none">• Detects and addresses problems faster with fewer resources, reducing downtime and maximizing availability
Designed for serviceability	<ul style="list-style-type: none">• 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
Up to 4-GB memory	<ul style="list-style-type: none">• Large memory capacity allows large applications to be run in memory, increasing performance
Support for up to 72-GB (2 x 36-GB), hot-pluggable, SCSI, low-profile disks	<ul style="list-style-type: none">• Large drive provides higher availability for mirroring
Optional 40X CD-ROM or 8X DVD-ROM drive	<ul style="list-style-type: none">• CD-ROM or DVD-ROM drive can be used to restore data, reinstall custom applications, or boot a custom Solaris CD image—providing a reliable, solid, fail-safe, noncorruptible file system to help minimize downtime due to failed disk drives
System configuration card that contains the system's configuration, host ID, MAC address, and open boot PROM settings	<ul style="list-style-type: none">• Aids in swapping out a faulty server with a replacement without reconfiguration and with minimal downtime

Reliability, Availability, and Serviceability (RAS)

Reliability

The Netra 120 server is based on Sun's ruggedized, SPARC, and Solaris platform reliability that is well established in the telco and government market. The Netra 120 server is NEBS Level 3 certified to withstand extreme environmental conditions.

Availability

- The Netra 120 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 120 server's major level FRU components include the system disk, CD-ROM or DVD-ROM, and memory.
- The system configuration card can be swapped easily by pulling out the card and replacing it without removing the cover and without special tools. As a result, a faulty server can be swapped out without reconfiguration and with minimal downtime.
- 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 120 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

System Requirements

The fixed Netra 120 server configuration comes with a minimum of 512-MB of memory. An ANSI console device is needed.

System Configuration

Up to 32 Netra 120 servers can be stacked in a standard 72-inch rack. The Netra 120 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
- DC power supply
- Solaris 8 Operating Environment (10/01) Update 6, 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	650-MHz UltraSPARC™ III+
Memory (standard PC133)	256-MB–4-GB memory
Operating environment	Solaris 8 Operating Environment (10/01) Update 6
Disks	Up to two 36-GB SCSI
Cache	512-KB (Level 2 cache)
PCI expansion	One slot, full length
Ethernet	Dual 10/100
USB	Two ports
Dimensions	18.8" deep x 17.2" wide x 1 RU height

The Netra 120 server is available in the following fixed configuration:

Configuration	Specification
Fixed	<ul style="list-style-type: none">• 650-MHz processor• 512-MB memory• 1 x 36-GB hard drive

The following components are available as options:

- Internal 40X CD-ROM or 8X DVD-ROM drive
- 18-GB or 36-GB, 10000-rpm low-profile drive
- Memory can be added up to 4-GB using 256-MB, 512-MB, or 1-GB DIMMs

Licensing/Usage

The Netra 120 server comes with a Solaris 8 server license for unlimited users.

Interconnect

The Netra 120 server is designed to be a headless server, therefore there is no parallel port, keyboard, or mouse.

The Netra 120 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:

- Sun 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 UltraSCSI
- ISP 2100F FCAL

Processor Options

Architecture	UltraSPARC™ Ii+ superscalar processor: 64-bit single processor, 650-MHz
Cache	<ul style="list-style-type: none">• 16-KB data and 16-KB instruction on chip• Secondary: 512-KB internal
Main Memory	<ul style="list-style-type: none">• Two 256-MB, 512-MB, or 1-GB PC133 DIMMs• 4-GB memory max per system

Standard Interfaces

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

Mass Storage and Media

Internal CD-ROM or DVD-ROM	Optional slimline 40X CD-ROM or 8X DVD-ROM drive
Disk	Up to two 3.5 x 1-in. Disks (36-GB); disk bays are front accessible and support hot-plug
External Storage	All UltraSCSI devices

Software

Operating Environment	Solaris 8 Operating Environment (10/01) Update 6
Languages	C, C++, Pascal, FORTRAN, Java™, all standard Sun-supported languages
Networking	ONC™, NFS, TCP/IP, SunLink™ OSI, MHS, IPX™/SPX, DCE, SS7, ATM, FDDI

Chassis Dimension and Weight

	U.S.	Metric
Height	1.73 in.	44.0 mm
Width (without mounting ears)	17.21 in.	437.2 mm
Depth (with front bezel)	18.8 in.	478.0 mm
Weight	20 lbs. (approx.)	9 kg (approx.)
Shipping Weight (product and packing)	25 lbs. (approx.)	11.5 kg (approx.)

Environment

The Netra 120 server is designed to meet the following requirements:

Power Requirements

	U.S.	International
Operating	-40/-75V DC	-40/-75V DC
Tolerance		

Temperature

	Fahrenheit	Celsius
Operating	41° to 104°	5° to 40°
Nonoperating	-40° to 158°	-40 to 70°

Humidity (Noncondensing)

Operating	5% to 90% relative humidity, noncondensing, subject to a maximum absolute humidity of 0.024 kg water/kg dry air
Nonoperating	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)

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

Regulations

The Netra 120 server meets or exceeds the following requirements:

Safety	UL 1950/CSA C22.2 No. 950, EN 60950 (73/23/IEEC), IEC 950
Emissions	CFR Title 47 FCC Part 15, EN 55022 (80/336/EEC)
Immunity	EN 50082-1 (89/336/EEC); GR-1089-CORE
Telco environment	Telcordia: GR-63-CORE, GR-1089-CORE, TR-NWT-00295 Telcordia: SR 3580 NEBS Level 3
Certification	Safety: cULus Mark, TUV GS Mark, CE Mark EMC: CE Mark (93/68/EEC), FCC authorized Class A

System Management

System Administration

The Netra 120 server's features were designed for ease of administration. Two Ethernet 10/100BASE-T ports come standard with Netra 120 servers. The LOM 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 external Web site at <http://www.sun.com/nebs/120>

Operating Environment

The Netra 120 server comes with the Solaris 8 Operating Environment (10/01) Update 6 and LOM software pre-installed. For information about upgrades and updates, refer to the following Web sites:

- Sun external Web site at <http://www.sun.com/nebs/120>

Ordering Information

Netra 120 servers are sold in single units. Orders take three days to process, two days to deliver.

Order Number	Title and Description
N25DUTA1-9S-512AV1	DC, 650-MHz, 512-MB DIMM, 1 x 36-GB hard drive

Optional Components

X-option number	X-options
X7085A	19-inch rack-mount kit
X6967A	24-inch rack-mount kit
X5239A	18-GB 10K RPM UltraSCSI hard drive
X5244A	36-GB 10K RPM UltraSCSI hard drive
X7088A	Internal 40X CD-ROM drive
X7288A	Internal 8X DVD-ROM drive
X7091A	256-MB DIMM
X7092A	512-MB DIMM
X7093A	1-GB DIMM
X1032A	Fresh Choice PCI card
X1033A	FastEthernet/P2.0 PCI card
X1034A	Sun Quad FastEthernet (QFE) PCI card
X1133A	SSL Accelerator PCI card
X1141A	Gigabit Ethernet Network Interface PCI card
X1155A	HSI PCI card
X1157A	ATM PCI card (155 MMF)
X1158A	ATM PCI card (155 UTP)
X6541A	UltraSCSI Differential Controller PCI card
X2156A	SAI PCI card
X6799A	PCI Single FC Network Adapter 100 MB/s with optical interface
X2069A	GBE/FCAL Combo card
X311L	Localized power cord kit (North American/Asian)
X312L	Localized power cord kit (Europe)
X314L	Localized power cord kit (Swiss)
X317L	Localized power cord kit (U.K.)
X383L	Localized power cord kit (Danish)
X384L	Localized power cord kit (Italian)

X-option number	X-options
X386L	Localized power cord kit (Australian)
X7098A	Power splitter cable

Field Replaceable Units

The following field replaceable units (FRUs) are available for the Netra 120 servers. Customers can choose to have hot standby servers and use the system configuration card feature or replace individual components.

FRU Part Number	Field Replaceable Units (FRUs)
540-5299	CPU, Fan, and Assembly
375-3065	Motherboard with 650-MHz CPU
370-4278	CD-ROM or DVD-ROM and paddle board
540-4689	NEBS 36-GB SCSI hard disk drive with S&P
370-4290	LED/SmartCard Reader
300-1489	DC Power Supply
540-5198	Fan Chassis
370-4237	256-MB Reg/Buffered DIMM
370-4281	512-MB Reg/Buffered DIMM
370-4874	1-GB Reb/Buffered DIMM
100-6889	NVRAM
370-4285	System Configuration Card

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 120 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.

Service and Support

The SunSpectrumSM 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 EnterpriseTM Services representatives for program and feature availability in their areas.

FEATURE	SUNSPECTRUM PLATINUM SM Mission-critical Support	SUNSPECTRUM GOLD SM Business-critical Support	SUNSPECTRUM SILVER SM Systems Support	SUNSPECTRUM BRONZE SM Self Support
Systems Features				
Systems approach coverage	Yes	Yes	Yes	Yes
System availability guarantee	Customized	No	No	No
Account Support Features				
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
Coverage / Response Time				
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
Enhanced Support Features				
Mission-critical support team	Yes	Yes	No	No

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

Warranty

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

Glossary

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.
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.
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.
RAM	Random access memory.
Revenue services	Services for which an organization 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	Description	Purpose	Distribution	Token # or COMAC Order #
Powerpack				
- <i>Netra 120 Server Just the Facts</i>	Reference Guide for the Netra 120 server (this document)	Training Sales Tool	SunWIN, Reseller Web	XXXXXX
References				
- <i>Netra t Telecommunications Server Family</i>	Quick Reference Card	Sales Tool, Training	SunWIN	75091
- <i>Transition of Netra t, 6/30/98</i>	Sun Product Intro	Sales Tool, Training	SunWIN	88736
Product Literature				
- <i>Netra 120 Server Data Sheet</i>	Data Sheet	Sales Tool, Training	SunWIN	XXXXXX
External Web Site				
- <i>Netra 120 Server Web Site</i>	www.sun.com/nebs/120			