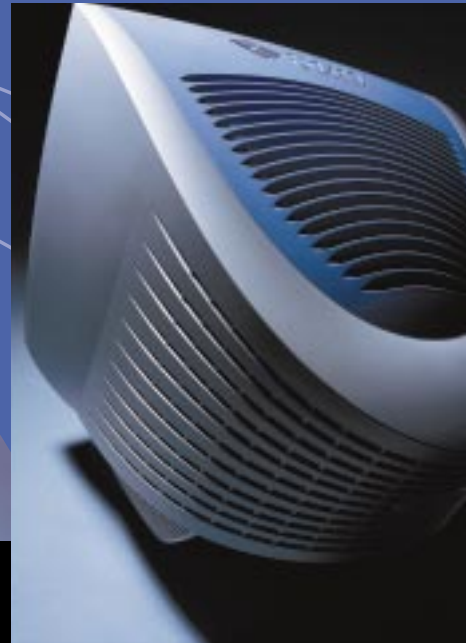




SUN RAY™ APPLIANCES

The Network is the Computer™



Sun Ray™ 1 Appliance



The Sun Ray™ 1 appliance is a compact, “plug-and-work” unit which features Sun’s Hot Desk technology. With Hot Desking, users’ sessions run on servers and are accessed through the use of a smart card. This unique feature brings flexibility and mobility to the user, enabling access to their session from any Sun Ray appliance in the workgroup.

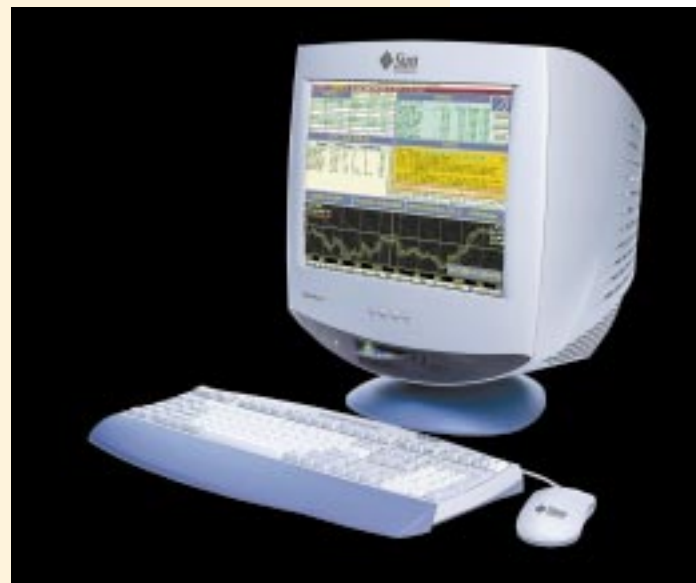
The Sun Ray 1 ships without a monitor and is compatible with Sun’s 17-inch, 19-inch, and 21-inch monitors or Sun’s 18-inch flat panel display. It can also work with standard VGA monitors commonly used with personal computers, enabling organizations to leverage existing IT investments.

All Sun Ray appliances include a keyboard, mouse, integrated smart card reader, 10/100 Mbit Ethernet connection, four powered USB ports for connecting peripherals (can also be used for serial and parallel adapters), and audio and video I/O connections.

Sun Ray™ 100 Appliance

The Sun Ray™ 100 appliance integrates Sun Ray functionality with a 17-inch CRT display. The Sun Ray 100 design reduces the desktop system footprint, while simplifying cabling and setup. Users will notice a large, clear display with no bulky computer equipment on their desk, while administrators will applaud the easy maintenance. Sun Ray appliances have no local processing, operating system or applications to upgrade. All of these functions are handled at the server so that an upgrade for one is an upgrade for all.

Sun Ray appliances access the Solaris™ Operating Environment and Java™ technology, as well as UNIX®, Microsoft Windows, and mainframe applications through Sun™ and third-party software.



Better utilizes system resources.

Delivers server class performance to the desktop.

Maintain operating system only on servers – eliminates administration at the desktop.

Provides simultaneous access to multiple platforms including: the Solaris™ Operating Environment, Java™ technology, UNIX®, mainframe applications, and Microsoft Windows.

Sun Ray™ 150 Appliance

The Sun Ray™ 150 appliance integrates Sun Ray functionality with a bright and clear 15-inch flat panel display. The display's compact design takes up little room on the desktop and is VESA compatible, allowing for wall or other mounting techniques.

The Sun Ray 150 comes with a built-in projector port which supports standard RGB projectors — this is especially useful for conference rooms, alleviating the need for presenters to bring their laptops or presentation equipment. And through Hot Desking, a presentation setup in an office can be accessed instantly from the conference room.

Up to 16 Sun Ray appliances may be combined to control separate applications on multiple screens with a single input device or, with XINERAMA, to span a single application across multiple screens.

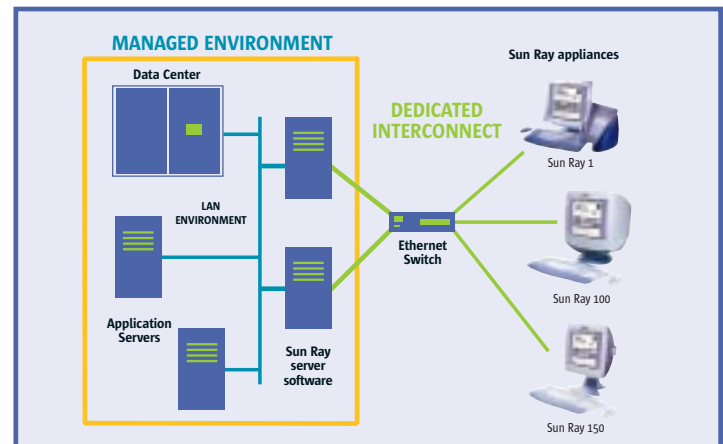


Benefits for IT Professionals:

- Eliminates maintenance at the desktop:
 - No operating system or software — eliminates all upgrades at the desktop
 - Stateless appliance
 - Simple “plug-and-work” setup or replacement
 - Eliminates need to upgrade desktop resources to take advantage of new applications
 - Low power consumption
- Centralized management
- More efficient utilization of computing resources
- Load distribution and failover supported by server grouping
- Appliance never needs upgrading
- Access to large number of applications running on the Solaris Operating Environment, Java technology, Microsoft NT 4.0 TSE via Citrix's MetaFrame software, other UNIX platforms, and 3270/5250 environments
- Allows users to access their unique environment from any appliance in the workgroup
- Leverages Sun's proven reliability, availability and scalability

Benefits for Desktop Users:

- Enables access to user's session from any Sun Ray appliance in the workgroup
- No need for multiple systems on the desktop
- Quiet, reliable operation — no fan or moving parts
- Small-footprint desktop
- Instant “plug-and-work” features
- Brings server class performance to the desktop
- Multimedia capable



Built on the reliability, availability, and scalability of the Solaris Operating Environment and robustness of Sun's SPARC™ servers.

Enhanced security through smart card technology.

Easy administration with remote Web-based administration tools.

Appliance never needs upgrading.

Sun Ray™ Appliances

The ultimate desktop appliance — well-suited for enterprise workgroup environments including: customer management solutions and call centers, education, government, financial services, hospitality, healthcare, and technical markets. Powered by Hot Desk technology, the Sun Ray™ appliance solution centralizes management, significantly lowers total cost of ownership, and maximizes access to computer services throughout the enterprise.

Features and Functionality

| Feature : | Sun Ray | Windows PC | Windows Terminal | X-Terminal |
|-----------------------------|---------|------------|------------------|------------|
| Multiplatform access | ■ | ■ | ■ | ■ |
| Smart card session mobility | ■ | | | |
| Multimedia enabled | ■ | ■ | | |
| Centralized administration | ■ | | ■ | ■ |
| No client OS | ■ | | | |
| “Plug-and-work” desktop | ■ | | | |

Specifications:

| HARDWARE | Sun Ray 1 | Sun Ray 100 | Sun Ray 150 |
|---|--|--|--|
| Graphics | 24-bit graphics Up to 1280 x 1024 @ 75 Hz | 24-bit graphics 17 in. diagonal shadowmask CRT display with Max. 1280 x 1024 @ 75 Hz | 24-bit graphics 15 in. TFT-LCD p/flat panel display with backlight system, 1024 x 768 |
| Peripheral interface | Four USB, powered | Four USB, powered | Four USB, powered Support of RGB projector port (1024 x 768 @ 60 Hz) |
| Networking | 10/100-BaseT Requires dedicated connection between each Sun Ray appliance and the server running the Sun Ray server software | 10/100-BaseT Requires dedicated connection between each Sun Ray appliance and the server running the Sun Ray server software | 10/100-BaseT Requires dedicated connection between each Sun Ray appliance and the server running the Sun Ray server software |
| Input devices | Type 6 USB keyboard USB mouse Smart card reader | Type 6 USB keyboard USB mouse Smart card reader | Type 6 USB keyboard USB mouse Smart card reader |
| Audio | CD quality audio in/out, microphone, headphone jacks | CD quality audio in/out, microphone, headphone jacks | CD quality audio in/out, microphone, headphone jacks |
| Video input | NTSC/PAL, RCA connector | NTSC/PAL, RCA connector | NTSC/PAL, RCA connector |
| Monitor | Industry standard HD15 connector supports Sun's monitors, including 17 in., 19 in., and 21 in.; Sun's 18 in. flat panel; standard VGA compatible monitors | Integrated 17 in. CRT, .26 dot pitch | Integrated 15 in. TFT-LCD, .31 full pixel pitch |
| Smart card | ISO-7816-1 (smart card reader) | ISO-7816-1 (smart card reader) | ISO-7816-1 (smart card reader) |
| Adjustments | N/A | Monitor tilt and swivel adjustment | Monitor tilt and height adjustment Removable support stand for wall mounting |
| DIMENSIONS | | | |
| Width | 102 mm (4 in.) | 417 mm (16.4 in.) | 429 mm (16.8 in.) |
| Depth | 280 mm (11 in.) | 450 mm (17.7 in.) | 240 mm (9.4 in.) |
| Height | 306 mm (12 in.) | 467 mm (18.4 in.) | 405 mm to 450 mm (15.9 in. to 17.7 in.) |
| Weight | 1.8 kg (3.9 lb.) | 18 kg (39 lb.) | 6 kg (13.4 lb.) |
| REGULATIONS | | | |
| Meets or exceeds the following requirements: | | | |
| Safety | UL 1950/CSA C22.2, No. 950, CE Mark: EN 60950, CB scheme: IEC 950, w/Nordic Deviations to EMKO-TSE (74-SEC) | UL 1950/CSA C22.2, No. 950, CE Mark: EN 60950, CB scheme: IEC 950, w/Nordic Deviations to EMKO-TSE (74-SEC) | UL 1950/CSA C22.2, No. 950, CE Mark: EN 60950, CB scheme: IEC 950, w/Nordic Deviations to EMKO-TSE (74-SEC) |
| Ergonomics | GS Mark: EN 29241-3, -7, -8 (ISO 9241-3, 7, 8), EKI 59-98 and EKI 60-98, BildscharbV A3, A5, A15, and A17 | GS Mark: EN 29241-3, -7, -8 (ISO 9241-3, 7, 8), EKI 59-98 and EKI 60-98, BildscharbV A3, A5, A15, and A17 TCO '99 | GS Mark: EN 29241-3, -7, -8 (ISO 9241-3, 7, 8), EKI 59-98 and EKI 60-98, ISO 13406, BildscharbV A3, A5, A15, and A17 TCO '99 |
| EMC | EN55022 Class B; FCC CFR Title 47, Part 15, Subpart B, Class B; ICES-003 Class B; VCCI Class B; EN55024:1998 (CISPR24:1997) | EN55022 Class B; FCC CFR Title 47, Part 15, Subpart B, Class B; ICES-003 Class B; VCCI Class B; EN55024:1998 (CISPR24:1997) | EN55022 Class B; FCC CFR Title 47, Part 15, Subpart B, Class B; ICES-003 Class B; VCCI Class B; EN55024:1998 (CISPR24:1997) |
| Power management | EPA Energy Star Compliant | EPA Energy Star Compliant TCO '99 Compliant | EPA Energy Star Compliant TCO '99 Compliant |
| ENVIRONMENT | | | |
| Operating | 0°C to 40°C (32°F to 104°F), 5% to 93% RH, 3km (10kft) | 0°C to 40°C (32°F to 104°F), 5% to 93% RH, 3km (10kft) | 0°C to 40°C (32°F to 104°F), 5% to 93% RH, 3km (10kft) |
| Nonoperating | -20°C to 60°C(-4°F to 140°F), 5% to 93% RH, 12km (39kft) | -20°C to 60°C(-4°F to 140°F), 5% to 93% RH, 12km (39kft) | -20°C to 60°C(-4°F to 140°F), 5% to 93% RH, 12km (39kft) |
| POWER | | | |
| AC power | 100-240 VAC autoranging power supply, 50-60 Hz, 0.5 A | 100-240 VAC autoranging power supply, 50-60 Hz, 1.8 A | 100-240 VAC autoranging power supply, 50-60 Hz, .5 A |
| Power consumption | Appliance power consumption 30W AC maximum, less than 20W typical | System power consumption 110W AC maximum, 95W AC typical, 25W AC maximum in PowerSaver mode | System power consumption 45W AC maximum, 30W AC typical, 15W AC maximum in PowerSaver mode |
| ACOUSTIC EMISSIONS | <3.5B, <28dBA (operator), ISO 9296 | <3.0B, <28dBA (operator), ISO 9296 | <3.0B, <28dBA (operator), ISO 9296 |
| SOFTWARE | | | |
| Sun Ray server software | Authentication manager, Session manager, Group manager, Administration tools Requires Solaris™ 2.6, Solaris 7 or Solaris 8 Operating Environment on Sun's SPARC™ servers | Authentication manager, Session manager, Group manager, Administration tools Requires Solaris™ 2.6, Solaris 7 or Solaris 8 Operating Environment on Sun's SPARC™ servers | Authentication manager, Session manager, Group manager, Administration tools Requires Solaris™ 2.6, Solaris 7 or Solaris 8 Operating Environment on Sun's SPARC™ servers |
| Related Software | Solaris Resource Manager™, Sun Management Center | Solaris Resource Manager™, Sun Management Center | Solaris Resource Manager™, Sun Management Center |

a new era

A New Era

With the dawn of the Internet era, the primary focus in enterprise computing has shifted away from hardware, software and applications toward network services. Today's Service-Driven Network is modular, dynamic and based on Internet standards that make network services available to any user, any time, from anywhere, using virtually any device.

A New Device

Sun Ray™ appliances are zero administration, ultra-thin clients that process only keyboard input and screen output, leaving all of the application processing and storage to the server. The user is greeted with a rich, simple experience, while the administrator is rewarded with a centrally managed and reliable environment. The Sun Ray is a simple "plug-and-work", zero administration appliance, much like the telephone. And like a telephone, it is completely stateless, meaning it is always on, readily accessible, and easily replaceable.



No desktop upgrades necessary to take advantage of new applications.

Hot Desking encourages greater collaboration, productivity, and flexibility within workgroups.

Optional smart card enables instant access to your user session from any Sun Ray appliance in the workgroup.

All-in-one models save valuable desktop space and simplify setup.

www.sun.com/sunray



HEADQUARTERS SUN MICROSYSTEMS, INC., 901 SAN ANTONIO ROAD, PALO ALTO, CA 94303-4900 USA
PHONE: 650-960-1300 OR 800-555-9SUN INTERNET: www.sun.com



We're the dot in .com™

SALES OFFICES

AFRICA (NORTH, WEST AND CENTRAL): +33 1 30674680 • ARGENTINA: +5411-4317-5600 • AUSTRALIA: +61-2-9844-5000 • AUSTRIA: +43-1-60563-0 • BELGIUM: +32-2-704-8000 • BRAZIL: +55-11-5187-2100 • CANADA: +905-477-6745 • CHILE: +56-2-3724500
COLOMBIA: +571-629-2323 • COMMONWEALTH OF INDEPENDENT STATES: +7-502-935-8411 • CZECH REPUBLIC: +420-2-3300-9311 • DENMARK: +45 4556 5000 • EGYPT: +202-570-9442 • ESTONIA: +372-6-308-900 • FINLAND: +358-9-525-561
FRANCE: +33-01-30-67-50-00 • GERMANY: +49-89-46008-0 • GREECE: +30-1-618-8111 • HUNGARY: +36-1-202-4415 • ICELAND: +354-563-3010 • INDIA: +91-80-5599595 • IRELAND: +353-1-8055-666 • ISRAEL: +972-9-9513465 • ITALY: +39-039-60551
JAPAN: +81-3-5717-5000 • KAZAKHSTAN: +7-3272-466774 • KOREA: +822-3469-0114 • LATVIA: +371-750-3700 • LITHUANIA: +370-729-8468 • LUXEMBOURG: +352-49 11 33 1 • MALAYSIA: +603-264-9988 • MEXICO: +52-5-258-6100 • THE NETHERLANDS: +31-33-450-1234
NEW ZEALAND: +64-4-499-2344 • NORWAY: +47-2202-3900 • PEOPLE'S REPUBLIC OF CHINA: BEIJING: +86-10-6803-5588; CHENGDU: +86-28-619-9333; GUANGZHOU: +86-20-8755-5900; HONG KONG: +852-2802-4188; SHANGHAI: +86-21-6466-1228
POLAND: +48-22-8747800 • PORTUGAL: +351-21-4134000 • RUSSIA: +7-502-935-8411 • SINGAPORE: +65-438-1888 • SLOVAK REPUBLIC: +421-7-4342 94 85 • SOUTH AFRICA: +2711-805-4305 • SPAIN: +34-91-596-9900 • SWEDEN: +46-8-631-10-00
SWITZERLAND: GERMAN: 41-1-908-90-00; FRENCH: 41-22-999-0444 • TAIWAN: +886-2-2514-0567 • THAILAND: +662-636-1555 • TURKEY: +90-212-335-22-00 • UNITED ARAB EMIRATES: +9714-3366333 • UNITED KINGDOM: +44-1-276-20444 • UNITED STATES: +1-800-555-9SUN OR
+1-650-960-1300 • VENEZUELA: +58-2-905-3800

SUN™ ©2001 Sun Microsystems, Inc. All Rights Reserved. Sun, the Sun Logo, Sun Ray, The Network is the Computer, We're the dot in .com, Solaris, Solaris Resource Manager, Sun Enterprise SyMON, and Java are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the United States and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc. Specifications are subject to change without notice.

Printed in USA 01/01 BE1016-1/30k