

Sun Fire™ Thin Server Solution

Application Brief



The Features to Your Success

Companies need to deploy reliable, full-featured solutions today that are extensible for the new applications that will come out tomorrow. They must consider the impact of expense, reliability, availability, scalability, interoperability, manageability, serviceability, speed, and security. Sun has addressed these issues for Tier 1 services with the Sun Fire™ V100 and Sun Fire V120 rack-optimized servers.

Total Cost of Ownership

Total cost of ownership (TCO) reaches beyond the initial product price to include costs for support, operations, and use. Deploying Sun Fire V100 and Sun Fire V120 servers can help enable you to reduce TCO. With a \$995 entry price, Sun Fire thin servers are the industry's least expensive, brand name, rack-optimized, general purpose servers. The servers use less power and emit less heat which lowers operating costs. A smaller footprint reduces real estate costs. Remote management with LOM means reduced labor costs for maintenance. The Sun Fire V100 and Sun Fire V120 servers have features designed to increase reliability thereby maximizing uptime, another factor that can reduce TCO. By using SPARC™ architecture and Solaris™ Operating Environment-based solutions across the entire architecture, you can realize the cost savings and investment protection that comes from a single operating environment, single interface, and single contact for support.

Solaris Operating Environment

The Solaris Operating Environment, the highest rated UNIX® operating system, according to the results of the "2001 Unix Function Review" performed by industry analyst firm, D.H. Brown Associates, combines power, stability, and predictability with complete backwards compatibility. It offers data center-class reliability, availability, and serviceability at a fraction of the cost of a mainframe.

Solaris 8, the latest version of the Solaris Operating Environment, offers one of the most mature networking stacks in the industry. Because it supports the latest networking protocols

Overview

Any one who buys, manages, and maintains servers knows that security, availability, and total cost of ownership (TCO) are critically important issues that must be addressed during all phases of network architecture development, design, and deployment. Sun's response to these issues is the Sun Fire™ V100 and Sun Fire V120 thin servers.

The Sun Fire V100 thin server is a low-cost, entry-level server that is ready for out-of-the-box use. It is the ideal platform for moderate-sized Web servers and suitable in environments where reliability and robustness are critical but expandability is not required. The Sun Fire V120 thin server is also a cost-effective, expandable server that is ready for out-of-the-box use. The Sun Fire V120 server, however, is ideal for larger-sized Web servers or environments where greater connectivity (via PCI slot expansion) or storage is necessary.

Sun Fire V100 and Sun Fire V120 servers can be used for a broad range of applications in a broad range of markets. These include the financial, service provider, education, health care, government, and telco sectors. Example applications include:

- Web servers
- E-commerce servers
- E-mail servers
- Firewalls

Sun Fire V100 and Sun Fire V120 thin servers provide a stable, reliable, and economic hardware solution along with a large catalog of applications coupled with world-class service and support and a wealth of best-of-breed partners.

With the Sun Fire V100 and Sun Fire V120 thin servers, networks can be designed with Sun hardware for Tier 1 to Tier nth.

“The Sun Fire V100 and Sun Fire V120 servers help you lower the total cost of ownership, maximize the use of rack space, and increase system performance for network edge services such as Web servers, firewall, DNS, and so on. Compared to older Sun systems, the Sun Fire V100 and Sun Fire V120 servers offer higher performance, greater scalability, and better serviceability.”

<http://www.sun.com/servers/entry>

and standards, the Solaris 8 Operating Environment is the ideal platform for the development of agile, dependable, leading-edge network applications.

The Sun Fire V100 and Sun Fire V120 thin servers come with the Solaris 8 Operating Environment preinstalled. And because the Solaris 8 Operating Environment is binary compatible, any applications developed under earlier versions (as well as future versions) will continue to run.

Deployment in a Three-Tier Network

Hardware is the basis for any network architecture. With a solid hardware base, software development activities can take place without a comprehensive view of the underlying architectures that the software will eventually run on. Many companies are already using Sun hardware platforms to provide the Tier 2 and Tier 3 functions. The Sun Fire V100 and Sun Fire V120 servers provide the central components of the Tier 1 portion of a three-tier network. Refer to the diagram on the next page for an example of how the Sun Fire V100 and Sun Fire V120 servers can fit in your network architecture.

Sun™ ONE

Sun Open Net Environment (Sun ONE) encompasses Sun’s standards-based software vision, architecture, platform, and expertise for building and deploying Services on Demand. Based on open industry standards to avoid lock-in with any one vendor, Sun ONE supports the development and deployment of dedicated and Web-based applications today as well as the emerging service delivery methods of tomorrow. Through its open, integratable architecture, Sun ONE can help extend your current systems to help reduce costs and complexity, while improving your return on assets (ROA). The Sun Fire V100 and Sun Fire V120 servers provide the ideal Tier 1 components to build a Sun ONE architecture.

Applications

Within a three-tier network architecture, the Sun Fire V100 and Sun Fire V120 servers can be deployed to perform various functions within the first tier. In addition to a variety of other front end services, they can act as Web, firewall, or DNS servers. If more functionality



Sun has everything to help you build your network.

is needed, more servers can be added incrementally. This type of scalability—horizontal—helps increase availability and application uptime. If a server should fail, end users will continue to have access to the application without a significant degradation in the quality of service.

Web Servers

In a multi-tier architecture, the front tier faces the Internet and is the tier where the Web servers are located. Thus, a Web server solution should be designed to scale elegantly while integrating seamlessly with other software applications and hardware components. The solution should be based on solid building blocks, which includes the hardware, the operating environment, the Web server application, and other related applications, such as portal server software and application software. The components should use space efficiently and have the ability to be managed effectively.

The Sun Fire V100 and Sun Fire V120 servers make ideal Web servers because of their compute density and horizontal scalability. The 1 RU (1.75" in height) form factor allows many Sun Fire V100 and Sun Fire V120 servers to fit in a rack. Additional servers can easily be added as traffic increases.

The Sun Fire thin servers ship with Apache, Sun™ ONE Web Server, and Sun™ ONE ASP software.

While networks cannot be made virus proof, developers who use Active Server Pages (ASP) now have an alternative to make their networks less susceptible to attack. Sun ONE ASP software, when used with the Sun Fire V100 or Sun Fire V120 servers and Sun ONE or Apache Web server software, provides an efficient, cost-effective, and highly secure platform for deploying ASP-based Web sites and applications. Sun ONE ASP software allows customers to easily run existing ASP applications using Sun ONE or Apache Web servers. Because these Web servers are non-IIS Web servers, they are not vulnerable to viruses or



Sun Fire V100 Server



Sun Fire V120 Server

Web-based worms such as Code Red or Nimda, which exploited a vulnerability within Microsoft's Internet Information Web server (IIS).

Sun Fire V100 and Sun Fire V120 servers can also be deployed as caching servers to make more efficient and cost effective use of Internet resources while reducing latency.

With SSL and an accelerator card such as that from Sun, Sun Fire V120 servers can be part of an e-commerce infrastructure.

Security Services

Security is an increasingly important concern. Access to both the network and the data inside must be protected from the uninvited as well as from viruses. Sun Fire V100 and Sun Fire V120 servers can operate with many third-party security products and are the ideal platform for providing security services such as:

- Threat management
- Virus detection
- Intrusion detection
- Authentication services and access control
- Decoy/honeypot
- Firewall/VPN

Other Front-End Tier 1 Services

The Sun Fire V100 and Sun Fire V120 servers are the perfect choice to front-end a three-tier network or to host, or be a gateway for, the following front-end services for a larger server:

- DNS/LDAP directory services: by dedicating a server to name resolution, you can decrease the time it takes to access that service
- Network management: by installing management software, you can monitor your entire network through one box
- E-mail messaging and relay: by configuring a Sun Fire V100 or Sun Fire V120 server to provide e-mail services, you can increase the quality of service you provide to your users

- Video streaming: by dedicating a Sun Fire V100 or Sun Fire V120 server to deliver video on demand or your next Web broadcast, you can reduce the load on your network and increase the quality of service you provide to your users
- Web and proxy caching: by caching popular sites on a Sun Fire V100 or Sun Fire V120 server, you can increase availability

Key Product Features of the Sun Fire Thin Servers

Specifications	Sun Fire V100 Thin Server	Sun Fire V120 Thin Server
CPU	500 MHz	550 MHz or 650 MHz
Memory	128 MB – 2 GB	256 MB – 4 GB
Expandability	— — —	<ul style="list-style-type: none"> ■ Single, full length PCI slot ■ 80 MB/sec Ultra SCSI
SCC and reader	Rear accessible	Front accessible
Internal disk	Up to two 40-GB IDE	Up to two 3.5 x 1 inch disks (18 GB or 36 GB each) Disk bays are front accessible and hot pluggable
Operating environment	Solaris 8 Operating Environment, pre-installed Lights Out Management, pre-installed	
CD-ROM	Internal CD-ROM drive	
Ethernet ports	Built-in industry-standard RJ45 console and serial ports	
Connectivity	Dual Ethernet/Fast Ethernet, two RS-232C/RS-423 serial ports (RJ45), and two USB ports	
Rack unit	1 RU high	
Rackmounting	19", 23", 24", and 600 mm slide/front/center	

Manageability

Sun designed the Sun Fire servers to meet high levels of availability. To this end, the Sun Fire V100 and Sun Fire V120 servers come standard with a lights out management (LOM) software module preinstalled. LOM enables the servers to be monitored and controlled remotely, which simplifies day-to-day management and administration.

LOM management features include powering up the system, returning it to standby mode, setting alarms, and resetting the server from a remote location. Subsystem monitoring within the LOM management tracks enclosure temperature and supply rail voltage monitoring.

A standard feature of LOM is automatic system restart (ASR). ASR is a daemon that reduces downtime by enabling administrators to configure the server to restart automatically in case of a software lock-up.

LOM can be interfaced with Sun Management Center modules, SNMP MIBs, or directly via the console. System administrators can monitor important aspects of the servers from a dedicated serial port.

Serviceability

The Sun Fire V100 and Sun Fire V120 servers feature a system configuration card (SCC). The SCC contains the Host ID, MAC address, and NVRAM settings. If a Sun Fire V100 or Sun Fire V120 server needs to be replaced, the card and boot disk can be transferred to a backup

Get the details.

For more information about Sun Fire V100 and Sun Fire V120 servers, go to <http://www.sun.com/servers/entry>

server, allowing the backup server to take the place of the failed server, thus minimizing downtime.

Other serviceability features include front and back LEDs, and front label area. The Sun Fire V120 server also has front accessible, dual hot swap drives, and rack mount slides.

Conclusion

Sun Microsystems has developed end-to-end architecture — massively scalable systems and software that spans from micro devices to mainframe-class systems — based on SPARC and Solaris for maximum interoperability. With the Sun Fire V100 and Sun Fire V120 thin servers, networks can be designed with Sun hardware from Tier 1 to Tier nth. This enables organizations to lower their total cost of ownership by standardizing on the robust, award-winning Solaris Operating Environment. Other benefits include minimizing the cost of IT administration, contacting a single vendor for service and support, and running the same applications on all SPARC and Solaris systems throughout the network.

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