

Sun N1™ System Manager

Simplifying Infrastructure Life Cycle Management



Highlights

Simplifies infrastructure life cycle management for Sun Fire™ x64 servers and SPARC® workgroup servers by enabling users to:

- Logically group systems and perform actions across a group of systems
- Automatically discover bare metal systems
- Remotely install operating systems
- Remotely install and update firmware, software packages, patches
- Monitor hardware and OS attributes
- Set event notification alerts via e-mail, pager, SNMP traps
- Remotely power systems on/off
- Grant specific management permissions to specific users
- Execute tasks via hybrid UI that integrates the GUI and CLI



In today's growing compute environments, a large number of volume servers perform the computing tasks of a machine with many processors. Sun's x64 and SPARC® servers deliver the flexibility and performance to create a myriad of opportunities for building technical and business solutions that match specific customer requirements. These types of systems are well-suited for applications such as grid computing, analytical simulations, oil and gas explorations, application and Web serving, search engines, and more.

As the number of systems grows in any organization, the complexities of managing this infrastructure through its life cycle becomes increasingly apparent. A server could see many reprovisions in its lifetime: for example, it could change from an application server to a Web server, then be moved from one grid environment to another. Once provisioned, organizations must continuously monitor and manage the infrastructure to ensure that systems are running at desired levels.

Managing each step of the infrastructure life cycle is challenging for even the most sophisticated IT organizations. Sun helps customers address these problems with its new infrastructure life cycle management software — Sun N1™ System Manager, which helps customers provision, monitor, patch, and manage Sun Fire x64 and SPARC workgroup servers.

A step-by-step approach

N1 System Manager takes a step-by-step approach to unraveling the challenges of getting systems operational quickly.

Discover

As systems are added to the management network, administrators can use N1 System Manager to discover bare metal systems based on a given subnet address or IP range.

Group

Given the number of systems to manage and the constant repurposing of systems, it is critical for IT organizations to find ways to group resources together. N1 System Manager enables users to logically group systems together and perform actions across a group of systems as easily as performing actions on a single system. Systems can be grouped by function (Web servers versus grid computing), administrative responsibility, or other categorization based on organizational needs.

Provision

N1 System Manager remotely installs operating systems — the Solaris™ Operating System (OS), Red Hat, or SuSE Linux — onto selected systems. Administrators can use this functionality to provision operating systems onto bare metal systems or re-provision existing systems. As the infrastructure life cycle continues, N1 System Manager can update firmware and provision software packages and patches to selected systems.

Monitor

Once systems are up and running, administrators can use N1 System Manager to monitor system health, ensuring that systems are running at their optimal levels. The software provides detailed hardware monitoring for attributes such as fans, temperature, disk, and voltage usage — including bare metal systems. N1 System Manager also monitors OS attributes such as swap space, CPU, memory, and file systems. Administrators can define specific threshold levels and set preferred notification methods — e-mail, pager, or Simple Network Management Protocol (SNMP) traps — for each monitored component as business needs demand.

Manage

Businesses require that infrastructure life cycle management extend beyond just deploying and monitoring systems. N1 System Manager includes Lights Out Management capabilities, such as powering systems on and off, and remote serial console access which helps organizations manage their IT infrastructures from remote locations. Leveraging N1 System Manager software's Role-Based Access Control (RBAC) feature, organizations can grant specific users permission to perform specific management tasks.

Hybrid user interface

Most management software offers users a graphical user interface (GUI) and command line interface (CLI) to execute management tasks. Often, some administrators prefer the GUI, while others prefer to use the CLI to manage systems. This difference in preference makes it difficult for IT organizations to maintain visibility into which actions were taken via CLI or GUI.

The screenshot displays the Sun N1 System Manager interface. At the top, it shows 'User: Admin (root)' and 'Server: hdsca-50'. The main area is titled 'All Servers' and contains a table with 7 servers. Below the table is a terminal window showing CLI commands and their descriptions.

Name	Hardware	Hardware Health	Power	OS Usage	OS Resource Health	Jobs
hdsca-27	V20z	Good	On	Linux 2.4.21-15.ELsmp	Failed Critical	0
hdsca-30	V20z	Good	On	Linux 2.4.21-15.ELsmp	Failed Critical	0
hdsca-45	V20z	Good	On	Linux 2.4.21-15.ELsmp	Failed Critical	0
hdsca-46	V20z	Good	On	-	Uninitialized	0
hdsca-48	V20z	Good	On	Solaris 5.10	Good	0
hdsca-50	V20z	Unmonitored	On	Linux 2.4.21-15.ELsmp	Unmonitored	0
hdsca-51	V20z	Good	On	Linux 2.4.21-15.ELsmp	Good	0

```

discover Discover new servers to be managed
help Use help <command> <object> or help <object>
load Install software on server or server group
remove Remove a member from an object or group
reset Reboot servers or group of servers
set Set attributes on servers or other objects
show List information for an object or group
start Enable an object, such as power on servers
stop Disable an object, such as power off servers
unload Uninstall software from servers
N1-ok>

```

Hybrid UI — Sun N1 System Manager

N1 System Manager takes a unique approach to this problem, offering users a hybrid user interface (UI), accessible from the Web, that integrates both the GUI and CLI into a single console. With this hybrid UI, operations performed in the GUI are simultaneously reflected in the CLI, and vice versa.

A compelling offer

Whether you're in the market for a rock-solid foundation for Web or application serving, a massively scalable database management engine, or a dependable building block for grid computing, Sun's x64 and SPARC servers deliver superior performance at a competitive price and cost of ownership. These systems set new standards for value, performance, flexibility, and choice. They come with built-in management software for single systems. Because

customers can utilize N1 System Manager software for managing and monitoring multiple systems on both the SPARC and x64 product lines, the Sun Fire product family is more compelling than ever.

N1 software

N1 System Manager is a key component of Sun's N1 software and services portfolio. Sun's N1 software products and services are designed to provision, monitor, and manage business services and infrastructure across their life cycles. For more information, visit sun.com/n1.

Feature	Capability	Benefit
Bare Metal Discovery	Automatically discovers bare metal compute nodes based on a given subnet address or IP range	Easily captures server information
Grouping	Enables users to logically group systems and perform actions across a group of systems as easily as performing actions on a single system	Reduces time spent on executing management tasks on individual systems
Bare Metal Provisioning	Remotely installs operating systems onto selected systems	Simplified method for deploying multiple OS payloads from a single console
Firmware Updates	Remotely deploys firmware on selected systems	Secure, scalable, and simple method for updating firmware
Software Updates	Remotely deploys Solaris patches and packages and Red Hat Linux Package Manager (RPM) on selected systems	Secure, scalable, and simple method for updating software
Hardware Monitoring	Monitors fan, temperature, disk, and voltage usage on systems, including bare metal	Enables users to monitor hardware attributes
OS Monitoring	Monitors swap space, CPU, memory, and file systems	Enables users to monitor OS attributes based on user-defined thresholds
Event Logging	Tracks all events for monitored attributes	Enables users to view all events
Event Notification	Alerts users via e-mail, pager, or through SNMP traps when user-defined thresholds are exceeded for monitored hardware and OS components	Provides early warnings of potential risks
Lights Out Management	Enables users to remotely power on and off systems; allows command execution on selected remote systems; allows access to serial console on remote systems	Provides centralized control of all managed nodes; enables users to take systems off line for maintenance; enables system administrators to diagnose remote systems before and during OS install process
Role-Based Access Control	Enables IT staff to grant specific management permissions to specific users	Enables organizations to manage security in line with organizational structure
<ul style="list-style-type: none"> Hybrid UI Web UI CLI 	Offers administrators an integrated GUI and CLI in one console; enables remote accessibility to manage systems; provides remote Secure Shell (SSH) accessibility to managed nodes, giving administrators the option of executing tasks via command line	Simultaneously reflects all operations performed in the GUI in the CLI and vice versa, providing increased visibility into the operations performed across selected systems; enables anywhere, anytime management

N1 System Manager platforms and requirements

- Minimum 2 GB of memory
- Minimum 36 GB of disk drive
- Two Ethernet ports

Hardware

N1 System Manager supports only systems with a service processor.

- Sun™ x64 servers
- Sun volume SPARC servers

Management servers

- Sun Fire V20z or Sun Fire V40z with 2-GB memory
- Sun Fire X4100, Sun Fire X4200
- Sun Fire X2100 (closed)
- Sun Fire T2000
- Sun Fire T1000
- Sun volume SPARC servers, Sun Fire 210, Sun Fire 240, Sun Fire 440, Netra 240, and Netra 440.
- 72-GB disk drive and two Ethernet ports running the Solaris 10 OS or Red Hat Enterprise Linux AS 3.0 update 2 or later (32-bit version only)

Managed nodes

- Solaris 9 9/04 OS on x64 platform
- Solaris 10 OS on SPARC platform
- Solaris 10 OS on x64 platform
- Red Hat Enterprise Linux AS/ES/WS 3.0 update 2 or later (32 and 64 bit)
- Red Hat Enterprise Linux AS/ES/WS 4.0 or later (32 and 64 bit)
- SuSE Linux Enterprise Server 9.0
- SuSE Professional Linux 9.2 and 9.3

Console

- Mozilla™ 1.5 and later browser
- Microsoft Internet Explorer 6.0 and later

Learn More

Get the inside story on the trends and technologies shaping the future of computing by signing up for the Sun Inner Circle program. You'll receive a monthly newsletter packed with information, plus access to a wealth of resources. Register today at sun.com/joinic.