Sun™ Secure Application Switch— Release Notes for V4.0 Software

Sun Microsystems, Inc.
www.sun.com

Part No. 819-7244-11 (v2)
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Regulatory Compliance Statements

Your Sun product is marked to indicate its compliance class:

- Federal Communications Commission (FCC) — USA
- Industry Canada Equipment Standard for Digital Equipment (ICES-003) — Canada
- Voluntary Control Council for Interference (VCCI) — Japan
- Bureau of Standards Metrology and Inspection (BSMI) — Taiwan

Please read the appropriate section that corresponds to the marking on your Sun product before attempting to install the product.

FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Modifications: Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

ICES-003 Class A Notice - Avis NMB-003, Classe A

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

VCCI 基準について

クラス A VCCI 基準について

クラス A VCCI の表示があるワークステーションおよびオプション製品は、クラスA 情報技術装置です。これらの製品には、下記の項目が該当します。

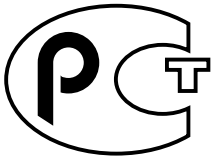
この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

BSMI Class A Notice

The following statement is applicable to products shipped to Taiwan and marked as Class A on the product compliance label.

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻 干擾，在這種情況下，使用者 會被要求採取某些適當的對策。

GOST-R Certification Mark



Declaration of Conformity

Compliance Model Number:	N1400
Product Name:	N1000 (N1400, N1400V, N1216, N1216V) - Sun Secure Application Switch

EMC

USA—FCC Class A

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This equipment may not cause harmful interference.
2. This equipment must accept any interference that may cause undesired operation.

European Union

This equipment complies with the following requirements of the EMC Directive 89/336/EEC:

As Telecommunication Network Equipment (TNE) in both Telecom Centers and Other Than Telecom Centers per (as applicable):

EN300-386 V.1.3.2 (2003-2005)		Required Limits:
	EN55022:1994+A1:1995+A2:1997	Class A
	EN61000-3-2:2000	Pass
	EN61000-3-3:1995+A1:2000	Pass
	IEC61000-4-2	6 kV (Direct), 8 kV (Air)
	IEC61000-4-3	3 V/m 80-1000 MHz, 10 V/m 800-960 MHz and 1400-2000 MHz
	IEC61000-4-4	1 kV AC and DC Power Lines, 0.5 kV Signal Lines,
	IEC61000-4-5	2 kV AC Line-Gnd, 1 kV AC Line-Line and Outdoor Signal Lines, 0.5 kV Indoor Signal Lines > 10m.
	IEC61000-4-6	3 V
	IEC61000-4-11	Pass

As Information Technology Equipment (ITE) Class A per (as applicable):

EN55022:1994+A1:1995+A2:1997		Class A
ENG6100-3-2:2000		Pass
ENG61000-3-3:1995+A1:2000		Pass
EN55024:1998+A1: 2001+A2:2003		Required Limits
	IEC61000-4-2	4 kV (Direct), 8 kV (Air)
	IEC61000-4-3	3 V/m
	IEC61000-4-4	1 kV AC Power Lines, 0.5 kV Signal and DC Power Lines
	IEC61000-4-5	1 kV AC Line-Line and Outdoor Signal Lines, 2 kV AC Line-Gnd, 0.5 kV DC Power Lines
	IEC61000-4-6	3 V
	IEC61000-4-8	1 A/m
	IEC61000-4-11	Pass

Safety

This equipment complies with the following requirements of the Low Voltage Directive 73/23/EEC:

EC Type Examination Certificates:

EN60950:2001 1st Edition	TÜV Rheinland Certificate No. S72051919
EN60950:2001, 1st Edition	CB Scheme Certificate No. US-TÜVR-2479
Evaluated to all CB Countries	
UL 60950:1st Edition 2001, CSA C22.2 No 60950-01-03	File: CO 72051920 01

Supplementary Information: This product was tested and complies with all the requirements for the CE Mark.

/S/

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Contents

Sun Secure Application Switch – Release Notes for V4.0 Software

The *Sun Secure Application Switch – Release Notes for V4.0 Software* contains the latest information and known issues for the Sun Secure Application Switch version 4.0 software.

The Sun Secure Application Switch is an intelligent application switch that provides advanced Layer 3 to Layer 7 (L3 to L7) load balancing and advanced Secure Sockets Layer (SSL) acceleration with reencryption. The switch provides these services on a flexible, virtualized basis, within the convenience of a single enclosure, and with industry-leading speed, security, and availability.

The V4.0 software is only supported on the N1000 Series of the Sun Secure Application Switch product family, consisting of the N1400 and the N1216. When it is necessary to differentiate between the two switches, the model numbers are used in this document.

Product Web Page

You can access updated product information, updated documentation, MIB information, and other relevant information about the Sun Secure Application Switch at the URL below. Periodically, you should check this URL to verify that you have the most recent version of this document.

http://www.sun.com/products/networking/switches/

Related Documentation

The Sun Secure Application Switch documentation listed here is available online at:

http://www.sun.com/products/networking/switches/

TABLE P-1 Related Documentation

Title	Part Number	Format	Location*
Sun Secure Application Switch – Getting Started Guide	819-3042	Printed PDF	Ship Kit Online
Sun Secure Application Switch – Release Notes for V4.0 (This document)	819-7244	Printed PDF	Ship Kit Online
Sun Secure Application Switch – Command Reference for V4.0	819-7594	HTML	Online
Sun Secure Application Switch – Online Help V4.0	819-7596	HTML	Within the application
Sun Secure Application Switch – Configuration and Implementation Guide	819-7595	PDF	Online

* You can also order at no cost a Documentation CD (part number X3797A) that includes these documents. Go to http://www.sun.com/products/networking/switches for information.

How to Obtain Updates From Sun

You can obtain updates and patches from your Sun authorized sales representative, service provider, or by downloading them from the SunSolve Online[SM] Web site at the following URL:

http://sunsolve.sun.com/

For patch information instructions, see the README file that accompanies each patch.

For downloads of released software, visit the Sun Download Center at the following URL:

http://www.sun.com/downloads

Contacting Sun Technical Support

If you have technical questions about this product that are not answered in this document, go to:

http://www.sun.com/service/contacting

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

http://www.sun.com/hwdocs/feedback

Please include the title and part number of your document with your feedback:

Sun Secure Application Switch – Release Notes for V4.0 Software, part number 819-7244.

New Features in This Release

The version 4.0 release includes the following new software features.

- Configuration Synchronization
- Behavior change: `show runningConfig saveToFile` Command
- Stateful Firewall Support
- Behavior Change: Default vRouter for Virtual Services
- Long Lived Sessions
- SNAT Active Standby Behavior In Redundant Configuration
- Specifying Which Cookies Are Used for Persistence
- Outgoing DNAT IP Address Is the Same As Virtual Service IP Address
- Stateful Flow SNAT

Configuration Synchronization

For information about the Configuration Synchronization feature, refer to the *Sun Secure Application Switch Configuration and Implementation Guide*, part number 819-7595.

Behavior Change: Show runningConfig saveToFile Command

In version 4.0, the defaultValues and nameValuePairs are included when a show `runningConfig saveToFile` command is executed. In previous versions of software, you manually had to set defaultValues and nameValuePairs to `true` to include this information.

Stateful Firewall Support

If a firewall goes down while the switch is transferring a file, the next available firewall in the configuration will maintain the current connection.

Behavior Change: Default vRouter for Virtual Services

When creating a virtual service, the default vRouter has changed from system:shared to the userdefined vRouter that is associated with the host.

Long-Lived Session

If long-lived session is enabled, up to 20,000 of a media module network processor's 500,000 active flow sessions can be reserved for long-lived usage. As new flows are required, the oldest inactive sessions are purged first. Long-lived sessions apply to L4SLB and L3SLB. The default setting for long lived sessions is disabled. When the feature is disabled, flow sessions will exist for 90 seconds.

SNAT Active Standby Behavior In Redundant Configuration

In redundant configuration applications, the back-up switch now puts SNAT in standby mode so IPs are not duplicated.

Specifying Which Cookies Are Used for Persistence

The switch administrator can specify which cookies are to be used for persistence.

You can choose multiple cookies to cause persistence in a single requestPolicy. Each cookie that is examined is checked in precedence order. This process is accomplished through a derivedVariable that uses predicates to look for each cookie value. Each cookie value that is examined is generated through a parsedVariable that is parsed from the COOKIE parsedList. The first cookie that is found is then changed to an integer value by generating a CRC32 of its string value.

```
regularExpression name COOKIE1_expression
   pattern {[[:space:]]*COOKIE1=([^[:space:]]*)[[:space:]]*}
parsedVariable name COOKIE1  parsedList COOKIE
      regularExpression COOKIE1_expression
regularExpression name COOKIE2_expression
   pattern {[[:space:]]*COOKIE2=([^[:space:]]*)[[:space:]]*}
parsedVariable name COOKIE2  parsedList COOKIE
      regularExpression COOKIE2_expression
regularExpression name COOKIE3_expression
   pattern {[[:space:]]*COOKIE3=([^[:space:]]*)[[:space:]]*}
parsedVariable name COOKIE3  parsedList COOKIE
      regularExpression COOKIE3_expression
derivedVariable name PICK1_COOKIE  type integer  expression {
    ( COOKIE1 present ? crc32(COOKIE1) :
      ( COOKIE2 present ? crc32(COOKIE2) :
        ( COOKIE3 present ? crc32(COOKIE3) : crc32(nil) ) ) )
}
```

Once this variable is created, it can be used in the fieldPrefix field of the requestPolicy, when the persistType is set to fieldHash.

Outgoing DNAT IP Address Is the Same As Virtual Service IP Address

DNAT entry can have same IP address of a virtual service.

Stateful Flow SNAT

When stateful flow SNAT is enabled, a client on the Internet will not be able to go through an SNAT address. The default setting for this feature is enabled. To disable this feature, type the syntax below.

```
(config)# vswitch backend loadBalance outboundNat static
stateful disabled
```

Supported Hardware

The V4.0 software is only supported on the N1000 Series of the Sun Secure Application Switch product family, which consists of two models: the N1400 and the N1216.

- The N1400 provides 4 Gigabit Ethernet (copper or fiber) ports and a full complement of system and port status LEDs.
- The N1216 provides two pluggable Gigabit Ethernet (copper or fiber) ports, sixteen 10/100-Mbps ports, and a full complement of system and port status LEDs.

Both models are rackmountable and operate on standard AC voltages (115 or 230 VAC) in either redundant or non-redundant power configurations

For a review of the Sun Secure Application Switch hardware, refer to the *Sun Secure Application Switch – Getting Started Guide*.

Transceivers

Sun has tested the ports on the front of the system with the following transceivers, which are listed by type, vendor, vendor part number, and Sun X Option number.

Fiber -

- FINSAR, FTRJ-8519P1 BNL, X2001A
- FINSAR, FTLF-8519P2BCL, X2001AZ
- FIBERXON, FTM-8012C-SLG, X2001AZ

Copper -

- FINSAR, FCMJ-8521-3, X2002A
- FINSAR, FCLF8521-3, X2002AZ

You can use other transceivers, but only the ones listed above have been fully tested by Sun for compatibility with the switch. If required, you can purchase these transceivers from Sun or directly from approved vendors.

Software Information

The V4.0 software release (V4_0R0) works with both models in the N1000 Series.

- If you currently have V3.x.y software on your switch, you can download the V4.0 software from the Sun Download Center at the following URL:
  `http://www.sun.com/downloads`

When migrating from software version V3.0.x to V4.0, you are not required to install software V3.1 as part of the migration process. However, you should refer to the V3.1 Release Note to become familiar with any software changes that may have been introduced with the V3.1 software. You can obtain the *Sun Secure Application Switch - Release Note for V3.1* at the URL below.

Note – The following URL is one continuous path.

```
http://www.sun.com/products-n-solutions/hardware/docs/
Network_Connectivity/secure_app_switches/n1000/index.html
```

Migrating From Software Version 3.x to Version 4.0

1. **Obtain and install the V4.0 software release from the Sun Download Center.**

   You can access the Sun Download Center Web site at the following URL:

   `http://www.sun.com/downloads`

   After the page loads, click Networking and scroll down to Network Connectivity, to access the software link.

2. **Reboot the switch.**

   After installing the version 4.0 software, the configuration database will automatically be upgraded to the version 4.0 format. The `.cdb` file name will remain the same after the upgrade.

Importing a Version 3.x Configuration

If you have installed version 4.0 software onto a switch that was already equipped with version 3.x software, the configuration database is automatically upgraded.

If you want to import a "portable" version 3.x configuration into a switch running version 4.0, perform the following steps:

1. **Perform the following manual edits.**

   a. **Remove any advanced settings for non-terminated virtualServices: L3SLB, L4SLB, TDLB, FWLB. In the following example, you must remove the virtual service advanced settings:**

```
# Virtual Service configuration

loadBalance virtualService vs1 L4SLB 1.1.1.1 sg2

loadBalance virtualService vs1

# Virtual service advanced settings

advanced rcvWnd 40000

exit; exit;
```

```
loadBalance virtualService vs2 TDLB 2.2.2.2 sg2

loadBalance virtualService vs2

# Virtual service advanced settings

advanced xmtRetryLimit 5

exit; exit;
```

b. Remove the Client Source IP Range and value if they exist in the configuration file being imported onto the switch. In the following example, you must remove FWLB sgl clientSrcIPRange 1.1.1.1-2.2.2.2

```
loadBalance virtualService fw FWLB sg1 clientSrcIPRange
1.1.1.1-2.2.2.2

loadBalance virtualService fw

exit; exit;
```

c. Save the file after edits are made

2. Verify that the Interactive feature is turned off.

At the switch prompt, type the following text then press the Enter key:

```
sun(config)# interactive off
```

3. Import the running configuration with `stopOnError` set to `false`, similar to the following:

```
sun(config)# import runningConfig FromFile <myConfig.txt>
password <myPassword> stopOnError false
```

System Management

Administrators can use multiple management tools to support the Sun Secure Application Switch in a network. These tools include:

- Command-Line Interface (CLI)
- Web interface
- SNMP applications

Command-line Interface (CLI)

The command-line interface (CLI) uses an industry-standard design that enables you to configure and manage the Sun Secure Application Switch by typing keyboard commands. You access the CLI over a direct console connection to the RS-232 port on the front of the system, or over a Telnet or SSH connection. A connection to the CLI is indicated by the `sun>` prompt on your screen.

The CLI uses a hierarchical design that enables you to move deeper into the command hierarchy as you build the configuration. The CLI uses the command prompt to display your current location within the hierarchy. Simple commands enable you to navigate to the appropriate context. See the *Sun Secure Application Switch – Command Reference* for information about the CLI and the Sun Secure Application Switch commands.

Web Interface

The Sun Secure Application Switch Manager Web interface is a graphical user interface (GUI) that enables you to configure and manage the Sun Secure Application Switch using a browser. The Web interface supports all management capabilities provided by the CLI. Instead of entering information on a command line, you navigate menus and supply information in data entry fields. See the *Sun Secure Application Switch – Online Help V4.0* for more information about the Web interface.

SNMP

The Simple Network Management Protocol (SNMP) enables you to communicate with the SNMP agent on the Sun Secure Application Switch system from a remote management station. This enables you to retrieve information about managed objects on the system as well as change configuration settings.

The Sun Secure Application Switch supports the following SNMP versions:

- SNMPv1
- SNMPv2c
- SNMPv3

The Sun Secure Application Switch supports the standard SNMP commands: GET, GETNEXT, GETBULK, SET. It does not, however, support any of the INFORM commands.

Supported Operating Systems and Web Browsers

The following operating systems and Web browsers have been tested and work with the Sun Secure Application Switch for version 4.0 software.

Operating Systems and Web Browsers

- Microsoft Windows (98, 2000, XP)
  - Internet Explorer 5.5 and 6.x
  - Netscape™ 6.2, 7.x
  - Mozilla™ 1.x
  - Firefox 1.x
  - Opera 6.x and 7.x
- Macintosh (OSX v10.1)
  - Internet Explorer 5.2
  - Netscape 7.x
  - Mozilla 1.x
  - Firefox 1.x

- Red Hat Linux
  - Netscape 7.1
  - Mozilla 1.x
  - Opera 6.x
- Solaris (9 and 10)
  - Mozilla 1.4 and 1.7
  - Firefox 1.x

Flash Software Plug-In

The minimum Macromedia Flash version required is version 6.0.65.0. Newer versions of Flash (such as 7.x and 8.x) also work.

Known Issues With This Release

This section describes the known problems, restrictions, and limitations in version 4.0 (V4_0R0) software on the Sun Secure Application Switch. For tracking purposes, an internal Sun reference number is included at the end of each item in this section.

ACLs

ACLs will not block traffic that is generated internally within the Sun Secure Application Switch, such as RIP advertisements, outgoing Spanning Tree BPDUs, etc. (2225/6351897)

The number of ACLs that can be applied to interfaces across the switch will vary with the complexity of the rules that are applied. If the internal table limits are exceeded, an error will be generated and reported through the syslog facility. (4226/156609)

Routed traffic on a single vRouter only hits either the ingress (inbound) or the egress (outbound) when it should hit both rules. The first rule loaded (either ingress or egress) will match the incoming packet flow. (6614/6351901)

ARP

ARP responses with multicast MAC addresses are not automatically installed. To resolve this issue, manually enter the static ARP. For example, firewall clusters can be configured to send multicast ARPs. (7274)

Configuration

When importing the running configuration from a text file, the VLAN interface might not be created. To create the VLAN interface when importing a running configuration from a text file, you must manually create the VLAN using the CLI. After the VLAN interface has been manually created, import the running configuration. There is no impact pertaining to the VLAN interface if the running configuration is imported using the `.cdb` file. (7170/6427489)

Firewall Load Balancing

When defining firewall real services create a static route on the switch for each of the firewalls. In the case where the firewall is the default gateway, a default route for each firewall should be defined. If a firewall real service is disabled or deleted the associated route for the firewall must be deleted as well. (7250/6483927)

Remove the Client Source IP Range and value from any configuration files being imported onto the Sun Secure Application Switch running V4.0. (7207/6462212)

Firewall load balancing is not supported in a redundant configuration using VSRP/VRRP. (6868/6427456)

FTP

The FTP client on the switch is not accessible through the Web interface. The FTP client must be used within the CLI. (3778/6351865)

Load Balancing

UDP Virtual services are not allowed to share the same Real Services. Prior to V4.0, this check was enforced. Unique UDP Real Services must be created for each UDP Virtual Service. (7361/6484593)

When LIST Server Health Check (SHC) is configured in a service group made up of 26 or more real services, SHC will not be sent. If you have 26 real services in a service group, do not use LIST SHC; use another type of health check instead. (7014/6428861)

Request Transform has a field header indicating which advanced HTTP header should be removed. The headers are not updated automatically; however, you can remove them manually. To access the field, click vSwitch, click loadBalance, then click requestTransform. (7159/6427487)

Opera Web browsers continue to request TCP data even when receiving a TCP-RST. This can cause the browser to appear hung. (2844/6351904)

UDP load balancing (including RADIUS and DNS) does not support frames with IP options. (4469/6351907)

Object Rules

The predicate variable HTTP_VERSION has been removed and replaced in version 3.x. You can now use REQUEST_VERSION in predicates with requestPolicies or use RESPONSE_VERSION in predicates with responsePolicies. (6841/6351913)

The predicate variables REFERER, ACCEPT, ACCEPT_LANGUAGE, UPGRADE, and SERVER behaved differently in the V3.0 software than in previous releases. With the V3.1 release, the predicate variables were reverted to work as they did in the V2.0 release. For additional information or assistance, contact Sun Technical Support. (6837)

Ports

The Ethernet management port will come up as 10/half if set to autonegotiate and connected to an endstation that is not autonegotiating and fixed at 100/full or 100/half. (1211/6351866)

Auto-negotiation does not work using the NS-83820 Fiber NIC and the Finisar SFF optical GBIC (part number FTRJ-8519-3). The SFF optical GBIC PicoLight, (part numbers: PL-XPL-00-S13-05 & PL-XPL-S23-28) will auto-negotiate with the NS-83820 Fiber NIC. (5682/6351875)

Jumbo frames directed to the switch IP address are dropped. (1665/6351881)

Spanning Tree Protocol BPDUs are not counted in VLAN interface statistics. (1055/6351882)

RealService

If you attempt to disable a RealService that is used by a Virtual service (VS) with the longRxTimer value set longer than the default (64 seconds) an error message will be displayed. To disable the RealService, you must remove it from the service group, then disable it. (7328)

Routing

If a static ARP entry is deleted, the switch does not send an ARP request for the given host. To resolve this issue, ping the host from the switch and the ARP will be sent. (7124/6427618)

IP interface vRouters do not report ICMP TTL expiration. As a result, the `traceroute` may not properly function in certain situations. (7147/6427480)

Directed broadcasts are not forwarded across IP interfaces. (2059/6351885)

The on-board traceroute command fails in an on-board IP interface. The ICMP `ping` command can be used. (5092/6351887)

The switch does not always respond to ICMP Address Mask requests properly. (3946/6351890)

OSPF type 2 AS external routes always use a metric of 1 regardless of the configured metric. (5693/6351891)

The switch will erroneously add a host route to the route table based on a received RIP update when the switch has already received a RIP update containing a route with a short mask for the same gateway. This compliance problem should have no negative network impact. (2457/6351892)

Security

CKM fails when trying to import a certificate, or chain of certificates, larger than 8 Kbytes. (6540/6427451)

VLAN

The Show VLAN Statistics command does not include transmitted or received spanning tree BPDUs. (1055)

Web Interface

Most browsers exhibit a security issue regarding the way basic authentication is implemented by continuing to send the old credentials after an error message is received. To avoid this issue, you must close the browser window used to connect to the switch to maintain security and prevent unauthorized access. Mozilla is the only browser that does not exhibit this issue. (1199/6351852)

Displaying statistics using line graphs will preserve all history of graphed data, which will continuously consume memory on your PC if left unattended. (2299/6351855)

Using the Web Interface, the dashboard has a slow memory leak, which is also present after the session times out due to inactivity. If the Web Interface is left open for long periods of time, such as overnight, this may cause workstation performance to deteriorate until the browser window is closed. (5927/6351858)

Online Help requires that JavaScript™ is enabled on your Web browser. (2104/1351860)

Configuration Scaling

Management

System vSwitch:

- One management vRouter
- Four shared vRouters
- 100 user accounts (used for login access to the switch)
- 10 concurrent CLI sessions
- 10 concurrent HTTP management sessions

Virtualization

User-defined vSwitches:

- One user-defined vSwitch for the N1216.
- Ten user-defined vSwitches, with the optional virtualization key on the N1400 and N1216.

L2 to L3 Scale

- Ports per LAG: 16
- LAGs: 22
- Ports or LAGs: 44 per VLAN
- VLANs: 512 per vSwitch, 4095 total
- ARP entries: 3000 per vRouter
- ACL lists: 4 per vRouter
- ACL rules: 256 per ACL list
- IP interfaces: 128 per vRouter
- Static routes: 200 per vRouter
- MAC entries: 16,000 total

Load Balance Configuration

- Maximum number of virtual services: 1024 per vSwitch, 2048 total
- Service groups: 512 per vSwitch, 4096 total
- Hosts: 1024 per vSwitch
- Real services: 1024 per vSwitch, 8192 total
- Maximum number of real services in a service group: 1024
- Request policies: 1024 per vSwitch, 4096 total
- Response policies: 1024 per vSwitch
- Request transforms: 1024 per vSwitch
- Response transforms: 1024 per vSwitch
- Object rules: 1000 per vSwitch
- Configurable health checks: 512 per vSwitch
- Active health checks: 1024 per vSwitch
- Keep-alives (1 probe or 1 list of up to 5 HTTP probes): 1 per vSwitch
- 1024-bit certificates: 512 per vSwitch

Note – The scaling numbers outlined above are individually achievable, but maximum configurations combining all of the scale factors are not achievable.

Documentation Updates

Please refer to the following Sun Web site for the most recent versions of the documentation for this product:

http://www.sun.com/products/networking/switches

Getting Started Guide

Table P-2 in the translated versions of the Getting Started Guide (819-3966-12, 819-3967-12, 819-3968-12, 819-3969-12, 819-3970-12, 819-3971-12, and 819-3972-12) contains incorrect references to related documentation. The correct references to related documents are shown below.

TABLE P-2 Related Documentation

Title	Part Number	Format	Location*
Sun Secure Application Switch – Getting Started Guide	819-3042	Printed PDF	Ship Kit Online
Sun Secure Application Switch – Release Notes for V4.0 (This document)	819-7244	Printed PDF	Ship Kit Online
Sun Secure Application Switch – Command Reference for V4.0	819-7594	HTML	Online
Sun Secure Application Switch – Online Help V4.0	819-7596	HTML	Within the application
Sun Secure Application Switch – Configuration and Implementation Guide	819-7595	PDF	Online

* You can also order at no cost a Documentation CD (part number X3797A) that includes these documents. Go to http://www.sun.com/products/networking/switches for information.