These Release Notes contain important information available at the time of release of Sun Java System Administration Server 5.2 2005Q1. New features and enhancements, known issues and limitations, and other information are addressed here. Read this document before you begin using Administration Server 5.2.

The most up-to-date version of these release notes can be found at the Sun Java System documentation web site: http://docs.sun.com/prod/sunone. Check the web site prior to installing and setting up your software and then periodically thereafter to view the most up-to-date release notes and product documentation.

These release notes contain the following sections:

- Release Notes Revision History
- About Administration Server 5.2 2005Q1
- Bugs Fixed in This Release
- Important Information
- Known Issues and Limitations
- Redistributable Files
- How to Report Problems and Provide Feedback
- Additional Sun Resources

Third-party URLs are referenced in this document and provide additional, related information.

NOTE
Sun is not responsible for the availability of third-party Web sites mentioned in this document. Sun does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Sun will not be responsible or liable for any actual or alleged damage or loss caused by or in connection with the use of or reliance on any such content, goods, or services that are available on or through such sites or resources.
About Administration Server 5.2 2005Q1

In some parts of the Administration Server documentation and console, the version number of the product is referred to as 5.2. Administration Server 5.2 2005Q1 is a maintenance release of Administration Server 5.2.

Administration Server and Server Console are provided by the Java Enterprise System installer as a single installable component for managing your Sun Java System server software. Server Console is a stand-alone Java application that works in conjunction with an instance of Directory Server and an instance of Administration Server. It acts as the front-end management application for Sun Java System software, finding all servers and applications registered in your configuration directory, displaying them in a graphical interface, and allowing you to manage and configure them, as well as add or edit user information.

This section includes:

- What’s New in This Release
- Hardware and Software Requirements

What’s New in This Release

Administration Server 5.2 2005Q1 is a maintenance release of Administration Server 5.2 2004Q2. No new features have been introduced in this release of the product.

For information about the bugs fixed in Administration Server 5.2 2005Q1, see “Bugs Fixed in This Release” on page 5.
The Administration Server commands are now documented as man pages. For more information, see “Documentation Notes” on page 8.

Hardware and Software Requirements

The following software is required for Administration Server 5.2 2005Q1.

**CAUTION** Before installing Administration Server on Solaris 8 Ultra SPARC® Platform Edition, Solaris 9 Ultra SPARC® Platform Edition, and Solaris 9 x86 Platform Edition you must ensure that the required OS patches have been installed. These patches can be obtained in the form or a patch cluster or as individual patches from http://sunsolve.sun.com. The required OS patch cluster include an installation script that installs the patches in the correct order. The clusters are updated periodically as new patch revisions are released. Select the “Patches” link on the SunSolve site and follow the links to obtain the available required OS patch clusters.

As Administration Server is installed to manage other servers, the RAM and disk space provisions for those other servers need to be added to the following provision to obtain realistic, overall requirements.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Solaris SPARC® Hardware and Software Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component</strong></td>
<td><strong>Platform Requirement</strong></td>
</tr>
<tr>
<td>Operating System</td>
<td>Solaris 8 Ultra SPARC Platform Edition with patches required for Java Enterprise System (Sun Cluster 3.1 Release 04/04 has been qualified to run on Solaris 8 02/02 (with the recommended patches installed) and Solaris 8 HW 05/03 (PSR 2))</td>
</tr>
<tr>
<td></td>
<td>Solaris 9 Ultra SPARC Platform Edition with patches required for Java Enterprise System (Sun Cluster 3.1 Release 04/04 has been qualified to run on Solaris 9 04/04)</td>
</tr>
<tr>
<td></td>
<td>Solaris 10 Ultra SPARC Platform Edition with patches required for Java Enterprise System</td>
</tr>
<tr>
<td>RAM</td>
<td>64 Mbytes</td>
</tr>
<tr>
<td>Disk space</td>
<td>50 Mbytes</td>
</tr>
<tr>
<td>Note that:</td>
<td></td>
</tr>
<tr>
<td>- Administration Server requires no disk space provision for data</td>
<td></td>
</tr>
<tr>
<td>- Administration Server requires limited disk space provision for logs</td>
<td></td>
</tr>
<tr>
<td>Java</td>
<td>Java Runtime Environment 1.5.</td>
</tr>
</tbody>
</table>
Table 3  Solaris x86 Hardware and Software Requirements

<table>
<thead>
<tr>
<th>Component</th>
<th>Platform Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Solaris 9 x86 Platform Edition (Sun Cluster 3.1 Release 04/04 has been qualified to</td>
</tr>
<tr>
<td></td>
<td>run on Solaris 9 04/04 x86 Platform Edition)</td>
</tr>
<tr>
<td></td>
<td>Solaris 10 x86 Platform Edition</td>
</tr>
<tr>
<td>RAM</td>
<td>64 Mbytes</td>
</tr>
<tr>
<td>Disk space</td>
<td>50 Mbytes</td>
</tr>
<tr>
<td></td>
<td>Note that:</td>
</tr>
<tr>
<td></td>
<td>- Administration Server requires no disk space provision for data</td>
</tr>
<tr>
<td></td>
<td>- Administration Server requires limited disk space provision for logs</td>
</tr>
<tr>
<td>Java</td>
<td>Java Runtime Environment 1.5.</td>
</tr>
</tbody>
</table>

Table 4  Linux Hardware and Software Requirements

<table>
<thead>
<tr>
<th>Component</th>
<th>Platform Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>RedHat Advanced Server 2.1 Update 2 or RedHat Advanced Server 3.0 Update 3</td>
</tr>
<tr>
<td>Patches or service packs</td>
<td>None</td>
</tr>
<tr>
<td>Additional software</td>
<td>None</td>
</tr>
<tr>
<td>Compatibility libraries</td>
<td>The following compatibility libraries:</td>
</tr>
<tr>
<td></td>
<td>• compat-gcc-7.3-2.96.128.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>• compat-gcc-c++-7.3-2.96.128.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>• compat-libstdc++-7.3-2.96.128.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>If you running 64-bit Linux, you must install the system libraries for 32-bit Linux.</td>
</tr>
<tr>
<td>Java</td>
<td>Java Runtime Environment 1.5.</td>
</tr>
</tbody>
</table>

NOTE  Administration Server 5.2 has been validated with Sun Cluster 3.1.
Bugs Fixed in This Release

The following table describes the bugs fixed in Administration Server 5.2 2005Q1 since Administration Server 5.2 2004Q2. For the release notes of Administration Server 5.2 2004Q2, see http://docs.sun.com/db/doc/817-5214.

<table>
<thead>
<tr>
<th>Bug Number</th>
<th>Bug Synopsis</th>
</tr>
</thead>
<tbody>
<tr>
<td>5025653</td>
<td>JES2: ArrayIndexOutOfBoundsException when particular characters are inserted</td>
</tr>
<tr>
<td>5042412</td>
<td>AIX - startconsole fails in ssl mode</td>
</tr>
<tr>
<td>5047194</td>
<td>Japanese On-Line Help Is Incomplete</td>
</tr>
<tr>
<td>5067904</td>
<td>Console Cannot Display a Certificate With a Quote (&quot;) In the DN</td>
</tr>
</tbody>
</table>

Important Information

For information that is not contained in the core product documentation, see the following sections:

- Installation Notes
- Documentation Notes

Installation Notes

For information about patch requirements and installation, see the following sections:

- Patch Requirement Information
- General Installation Information

Patch Requirement Information

For the current list of required patches for Administration Server go to http://sunsolve.sun.com and select either Patches or Patch Portal. Follow the Administration Server links. As operating system patch requirements change and patches to Java Enterprise System components become available, updates will be made available on SunSolve, initially in the form of recommended patch clusters.
If you have Administration Server 5.2 installed from Solaris packages and wish to bring it in line with Administration Server delivered from Java Enterprise System 2005Q1, install the following patches with the given version number or higher. To access the patches, go to http://sunsolve.sun.com.

**CAUTION** To avoid breaking product dependencies, it is mandatory to install the patches in the order provided in the following tables.

### Table 6  Administration Server 5.2 2005Q1 Alignment Patches Required For Solaris 8 (SPARC)

<table>
<thead>
<tr>
<th>Patch Number</th>
<th>Patch Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>116103-06</td>
<td>SunOS 5.8: International Components for Unicode Patch</td>
</tr>
<tr>
<td>117722-10</td>
<td>SunOS 5.8: NSPR 4.5.1 / NSS 3.9.5 / JSS 4.0</td>
</tr>
<tr>
<td>115328-01</td>
<td>SunOS 5.8: Simple Authentication and Security Layer (2.01)</td>
</tr>
<tr>
<td>115610-18</td>
<td>SunOS 5.9_sparc: Administration Server 5.2 patch</td>
</tr>
<tr>
<td>117047-17</td>
<td>Patch for localized Solaris packages</td>
</tr>
</tbody>
</table>

### Table 7  Administration Server 5.2 2005Q1 Alignment Patches Required For Solaris 9 (SPARC)

<table>
<thead>
<tr>
<th>Patch Number</th>
<th>Patch Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>114677-08</td>
<td>SunOS 5.9: International Components for Unicode Patch</td>
</tr>
<tr>
<td>117724-10</td>
<td>SunOS 5.9: NSPR 4.5.1 / NSS 3.9.5 / JSS 4.0</td>
</tr>
<tr>
<td>115342-01</td>
<td>SunOS 5.9: Simple Authentication and Security Layer (2.01)</td>
</tr>
<tr>
<td>115610-18</td>
<td>SunOS 5.9_sparc: Administration Server 5.2 patch</td>
</tr>
<tr>
<td>117047-17</td>
<td>Patch for localized Solaris packages</td>
</tr>
</tbody>
</table>

### Table 8  Administration Server 5.2 2005Q1 Alignment Patches Required for Solaris 9 (x86)

<table>
<thead>
<tr>
<th>Patch Number</th>
<th>Patch Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>114678-08</td>
<td>SunOS 5.9_x86: International Components for Unicode Patch</td>
</tr>
<tr>
<td>117725-10</td>
<td>SunOS 5.9: NSPR 4.5.1 / NSS 3.9.5 / JSS 4.0</td>
</tr>
<tr>
<td>115611-18</td>
<td>SunOS 5.9_x86: Administration Server 5.2 patch</td>
</tr>
<tr>
<td>117047-17</td>
<td>Patch for localized Solaris packages</td>
</tr>
</tbody>
</table>
On Linux systems, the alignment patches include the Administration Server patch available on http://sunsolve.sun.com and shared component patches, which are provided on the distribution CD. See “Applying Linux Shared Component RPMs” in the Sun Java Enterprise System 2005Q1 Upgrade and Migration Guide for information on locating and installing the RPMs.

### Table 9  Administration Server 5.2 2005Q1 Alignment Patches Required for Linux

<table>
<thead>
<tr>
<th>Patch Number</th>
<th>Patch Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>118079-05</td>
<td>sun-admin-server-5.2-13.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>sun-server-console-5.2-13.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>sun-admin-server-man-5.2-3.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>sun-nspr-4.5.1-2.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>sun-nss-3.9.5-1.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>sun-jss-4.0-5.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>sun-sasl-2.02-2.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>sun-icu-2.1-9.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>sun-ljdk-4.17-3.i386.rpm</td>
</tr>
<tr>
<td></td>
<td>sun-ldapcsdk-5.12-3.i386.rpm</td>
</tr>
</tbody>
</table>


### General Installation Information

- If you run Administration Server as root, all commands initiated by the administration user will also be run as root. Therefore you must apply the same rules of confidentiality and security to the administration password as you would to the root password of your server.

- When installing Administration Server 5.2 from Solaris Packages, it is recommended that you do not specify a symbolic link as the ServerRoot. The ServerRoot is the path from which you access the shared binary files of Directory Server, Administration Server, and the command line tools. If you do specify a symbolic link as the ServerRoot, and then attempt to start the Administration Server as someone other than the root user, the following error is output:

  You must be root to run this command
Documentation Notes

Man Pages
Directory Server commands and Administration Server commands are now documented as man pages and delivered in the following formats:

- As HTML and PDF in the following new documents: Directory Server Reference and Administration Server Reference
- As packages in the software distribution

➤ To Access the Man Pages
1. Ensure that the man pages packages are installed in the following default locations:
   For Solaris systems:
   
   SUNWdsman in /opt/SUNWdsman/man
   
   SUNWasman in /opt/SUNWasman/man

   For Linux systems:
   
   sun-directory-server-man-5.2-1.1386.rpm in /opt/sun/man

2. Update your MANPATH environment variable:
   For Solaris systems, run the following commands:
   
   $ export MANPATH=${MANPATH}:/opt/SUNWdsman/man
   
   $ export MANPATH=${MANPATH}:/opt/SUNWasman/man

   For Linux systems, run the following command:
   
   $ export MANPATH=${MANPATH}:/opt/sun/man

Product Version Number
In some parts of the Administration Server documentation and console, the version number of the product is referred to as 5.2. Administration Server 5 2005Q1 is a maintenance release of Administration Server 5.2.

Localized Documentation
Localized documentation is posted to http://docs.sun.com/ as it becomes available.
Known Issues and Limitations

This section contains a list of the known issues and limitations with Administration Server 5.2 2005Q1. The issues are grouped into the following categories:

- **Installation, Uninstallation and Migration**
- **General Issues**

### Installation, Uninstallation and Migration

#### Administration Server Cannot Start if Installation Path Is Too Long (#4788213)

If the installation path is more than 54 characters long the Administration Server cannot start correctly.

Workaround

Ensure that your full installation path does not contain more than 54 characters.

#### Console Does Not Support the Management of External Security Devices (#4795512)

The console does not support the management of external security devices, such as Sun Crypto Accelerator 1000 Board.

Workaround

Manage external security devices by using the command line.

#### Duplicate Value Error Logged in the Configuration Directory Server During Installation (#4841576)

During configuration of Directory Server, an ACI on the server group entry for each new server installation is added. If the entry already exists and the ACI value already exists on the entry (which is the case when Administration Server is installed after Directory Server), then a message similar to the following massage is logged in the Configuration Directory Server:

```
```

Workaround

Ignore the error message.
Known Issues and Limitations

**Cannot Use Multibyte Characters at Installation of AS and DS (#4882927)**
At installation, using multibyte characters for anything other than the suffix name causes Directory Server and Administration Server configuration to fail.

*Workaround*
Use monobyte characters for all fields other than the suffix name.

**Administration Server Installation Date Is Incorrect (#4908818)**
The installation date for Administration Server is incorrect.

*Workaround*
Ignore the installation date for Administration Server.

**Cannot Import a Chain of CA Certificates by Using Server Console or certutil Tool (#4913224)**
You cannot import a chain of CA certificates by using the Server Console or the `certutil` tool.

*Workaround*
Import one CA certificate at a time by using either the Server Console or the `certutil` tool.

**.suitespot File Is Not Removed When Administration Server Is Uninstalled (#4968548)**
When Administration Server is uninstalled, the `.suitespot` file is not removed from the ServerRoot directory.

*Workaround*
After uninstallation of Administration Server manually remove the `.suitespot` file from the ServerRoot directory.

**Cannot install Administration Server patch 115611-18 on Solaris 9 for x86 (#4970985)**
The `pkginfo` files delivered with Directory Server 5.2 for Solaris 9 for x86 contained an erroneous ARCH type (ARCH=sparc instead of ARCH=i386). This inconsistency with the Sun Java Enterprise System renders it impossible to apply patches.

*Workaround*
Before applying the patch, edit the following `pkginfo` files manually with the correct ARCH=i386 ARCH type:

* /var/sadm/pkg/SUNWasvc/pkginfo
* /var/sadm/pkg/SUNWasvcp/pkginfo
* /var/sadm/pkg/SUNWasvr/pkginfo
* /var/sadm/pkg/SUNWasvu/pkginfo
Administration Server Configuration Accepts Unsupported Versions of Java Development Kit (JDK) (#4990183)

Administration Server requires JDK version 1.4.1 or later. If JDK versions 1.3.x. is used during the configuration of Administration Server the Administration Server will not start. A warning is given but the configuration is not stopped.

Workaround
Use JDK version 1.4.1 or later during the configuration of Administration Server.

Backout Fails if Administration Server Is Backed Out Before Directory Proxy Server (#5015762)

Backout fails if Administration Server is backed out before Directory Proxy Server.

Workaround
Back out of Directory Proxy Server before backing out of Administration Server. For more information about updating and backing out of Directory Proxy Server, see the Java Enterprise System Upgrade and Migration Guide.

SUNW.mps Pointer in Incorrect Location After Relocation of Packages (#5035882)

If the SUNWas* packages are relocated to a directory other than the default installation directory, the SUNW.mps pointer is also relocated. Consequently, the SUNW.mps pointer will not be in the correct directory. To find the directory that contains the SUNW.mps pointer, run this command:

- For Administration Server 5.2 2005Q1:
  $ ls -d 'pkginfo -r SUNWasvr'/usr/cluster/lib/rgm/rtreg/
- For Administration Server 5.2 2004Q2:
  $ ls -d 'pkginfo -r SUNWasha'/usr/cluster/lib/rgm/rtreg/

Workaround
Do not relocate SUNWas* packages.

If you have relocated the SUNWas* packages, correct the location of the SUNW.mps pointer as follows:

1. Move the SUNW.mps pointer to this directory:
   /usr/cluster/lib/rgm/rtreg

2. Set the destination of the SUNW.mps pointer to the location returned by this command:
   - For Administration Server 5.2 2005Q1:
     $ ls 'pkginfo -r SUNWasvr'/etc/mps/admin/v5.2/cluster/SUNW.mps
   - For Administration Server 5.2 2004Q2:
     $ ls 'pkginfo -r SUNWasha'/etc/mps/admin/v5.2/cluster/SUNW.mps
Known Issues and Limitations

Cannot start Directory Proxy Server Console (#5041840)

If the Administration Server is started before the Configuration Directory Server after installation,
the Directory Proxy Server cannot access the Administration Server. In this scenario, it is impossible
to start Directory Proxy Server.

Workaround
Start the Configuration Directory Server before starting the Administration Server.

RPM Upgrade Fails From Administration Server 5.2 2004Q2 to Administration Server 5.2 2005Q1
(#5074779)

The following error is produced on Linux platforms during upgrade from Administration Server
5.2 2004Q2 to Administration Server 5.2 2005Q1:

    error: execution of %preun scriptlet from sun-admin-server-5.2-3 failed, exit status 1

This error occurs because the RPM manager installs the RPM for Administration Server 5.2 2005Q1
but cannot remove the RPM for Administration Server 5.2 2004Q2. The RPM for Administration
Server 5.2 2004Q2 is still configured and the pre-uninstall script (%preun) prevents it from being
removed.

Workaround
Manually remove the RPM for Administration Server 5.2 2004Q2, using the --noscripts option to
prevent the %preun script from being executed. For example:

    # rpm -e --noscripts sun-admin-server-5.2-3

Run the following command to verify that Administration Server 5.2 2004Q2 has been removed.
Only one RPM release should be returned:

    # rpm -q sun-admin-server

Cannot Install Patch 117047-05 on Administration Server 5.2 RTM (#6200639)

The localization patch 117047-05 cannot be installed during migration from Administration Server
5.2 RTM to Administration Server 5.2 2004Q2. The pkginfo files in patch 117047-05 are inconsistent
with those in Administration Server 5.2 RTM for the values ARCH and VERSION.

Workaround
Before apply the localization patch, perform the following steps:

1. On the server running Administration Server 5.2 RTM, locate the pkginfo files for each
   installed localization package. For example, the Japanese localization package files could be
   here:

   /var/sadm/pkg/SUNWjdsvcp/pkginfo
   /var/sadm/pkg/SUNWjdsvu/pkginfo
2. In the pkginfo file for each installed localization package, change the values of ARCH and VERSION to the following values:

   ARCH=all
   VERSION=5.2,REV=2003.05.23

General Issues

**admin_ip.pl Script Does Not Work Correctly (#4892243)**

The admin_ip.pl script does not work correctly.

*Workaround*

Use the console instead of the admin_ip.pl script.

**Security Restrictions for IP addresses and Hostnames Do Not Conform to Documentation (#4948897)**

For certain IP addresses and hostname formats, security restrictions for connecting to the Administration Server do not conform to the documentation.

**Help Page Does Not Exist for the Accounts Tab When Messaging Server Is Running (#4952871)**

When Messaging Server is running, the help page does not exist for the following location on the server console:

1. In the Console main window, click the Users and Groups tab
2. In the Users and Groups main window, double-click on any user
3. In the left-hand frame, select Accounts
4. Click on the Help button

*Workaround*

Do not manage users and mailing lists by using the console. Instead, use the User Management Utility as described in the Messaging Server Administration Guide, on http://docs.sun.com/source/819-0105/users.html.

**Cannot Restart Administration Server From the Console on an x86 Cluster (#4974780)**

The Administration Server cannot be restarted from the console when using Solaris 9 on an x86 cluster.

*Workaround*

On the Administration Server console select Stop Server and then Restart Server.
slapd Daemon Takes the Administration Server Port When Restarted From the Console (#5002054)

When the slapd daemon is restarted from the console, it can take the Administration Server port and prevent Administration Server from being restarted by the console.

Workaround
Restart the slapd daemon from the command line.

Advanced Search for Administrators Fails When the Console Is Not Running in English (#6196837)

Even though your directory contains administrators, these administrators are not found by an advanced search unless the console is running in English.

Workaround
None

Redistributable Files

Sun Java System Administration Server 5.2 2005Q1 does not contain any files which you can redistribute.

How to Report Problems and Provide Feedback

If you have problems with Sun Java System Administration Server, contact Sun customer support using one of the following mechanisms:

- Sun Software Support services online at http://www.sun.com/service/sunone/software
  This site has links to the Online Support Center, and ProductTracker, as well as to maintenance programs and support contact numbers.

- The SunSolve support website at http://sunsolve.sun.com
  This site includes patches, support documents, security information, and the Sun System Handbook.

- The telephone dispatch number associated with your maintenance contract
So that we can best assist you in resolving problems, please have the following information available when you contact support:

• Description of the problem, including the situation where the problem occurs and its impact on your operation
• Machine type, operating system version, and product version, including any patches and other software that might be affecting the problem
• Detailed steps on the methods you have used to reproduce the problem
• Any error logs or core dumps

You might also find it useful to subscribe to the following interest groups, where Sun Java System Administration Server topics are discussed:

http://swforum.sun.com

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. Use the web-based form to provide feedback to Sun:

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

Please provide the full document title and part number in the appropriate fields. The part number can be found on the title page of the book or at the top of the document, and is usually a seven or nine digit number. For example, the part number of this Administration Server 5.2 Release Notes is 817-7610-10.

Additional Sun Resources

Useful Sun Java System information can be found at the following Internet locations:

• Sun Java System Documentation
  http://docs.sun.com/db/prod/entsys.05q1
• Java Enterprise System Software Services
  http://www.sun.com/service/products/software/javaenterprisystem
• Sun Java System Software Products and Service
  http://www.sun.com/software
• Sun Java System Support and Knowledge Base
  http://sunsolve.sun.com
Additional Sun Resources

- Sun Support and Training Services
  http://www.sun.com/supporttraining

- Sun Java System Consulting and Professional Services
  http://www.sun.com/service/products/software/javaenterprisesystem

- Sun Developer Information
  http://developers.sun.com

- Sun Developer Support Services
  http://www.sun.com/developers/support

- Sun Software Data Sheets
  http://wwws.sun.com/software
Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays.