Solaris Resource Manager 1.3
Release Notes

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Contents

Solaris Resource Manager 1.3 Release Notes

This document briefly describes the Solaris™ Resource Manager product, specifies which patches must be on your system before you install the software, describes bugs and known problems with this release, and provides updates to other books in the documentation set. Release notes for the AnswerBook2™ Version 1.4 Documentation Server are also included.

This product can be used on systems running Solaris™ 2.6 *SPARC™ Platform Edition* 5/98 with KU patch 105181-11 (or greater) installed, Solaris 7 *SPARC Platform Edition* 5/99 (or later), or Solaris 8 *SPARC Platform Edition*.

For system requirements and installation instructions, see the *Solaris Resource Manager 1.3 Installation Guide*. For configuration and administration information, see the *Solaris Resource Manager 1.3 System Administration Guide*.

The Solaris Resource Manager 1.3 Collection is available on the product CD and on the docs.sun.com^{SM} Web site.

Note – If you are currently using the Solaris Resource Manager product on a system running a release prior to the Solaris 8 operating environment, the CD does not contain revised functionality for your software. You should *not* install the Solaris Resource Manager 1.3 CD unless you:

- Want to upgrade your operating system to the Solaris 8 operating environment so that you can use the new resource cap enforcement daemon.
- Want to load the updated documentation, which is applicable to all Solaris Resource Manager releases. The product documentation has been enhanced in the Solaris Resource Manager 1.3 release, so even if you are not upgrading your operating system software at this time, you should still use the latest documentation.

See the *Solaris Resource Manager 1.3 Installation Guide* for more information.

Introduction

The Solaris Resource Manager functionality provides the ability to allocate and control virtual memory, CPU, and other major system resources, ensuring their availability for users, groups, and applications. It implements administrative policies according to a plan that governs the resources each user can access and the level of consumption of those resources each user is permitted. This product makes it possible to consolidate servers and fully utilize system resources.

Solaris Resource Manager 1.3 introduces a new feature, the resource cap enforcement daemon. You must be running the Solaris 8 operating environment to use this new feature. For additional information, see "Physical Memory Management Using the Resource Capping Daemon" in *Solaris Resource Manager 1.3 System Administration Guide*.

Sun Cluster 3.0 Update Support

Solaris Resource Manager supports Sun™ clustering and High Availability products. Using Solaris Resource Manager and Sun Cluster together extends the value of both products by allowing more applications per server, increasing overall utilization of system resources, and ensuring continuous availability of resources and applications.

For system requirements and installation guidelines, see the *Solaris Resource Manager 1.3 System Installation Guide*. For usage and configuration information, see the *Solaris Resource Manager 1.3 System Administration Guide*.

Obtaining Service Information

Support, education, and consulting information can be obtained from the `http://www.sun.com/service` Web site.

Required Patches

Patches can be obtained at `http://sunsolve.sun.com` or through your normal support channels.

If you plan to perform Dynamic Reconfiguration operations on a Sun Enterprise™ 3000, Sun Enterprise 3500, Sun Enterprise 4000, Sun Enterprise 4500, Sun Enterprise 5000, Sun Enterprise 5500, Sun Enterprise 6000, or Sun Enterprise 6500 system platform, you must be running at least the 3.2.22 revision of the CPU PROM. If your system is running with a lower version of the CPU PROM, download patch 103346-22 or greater and install it as described in the patch's `README` file. This patch should be installed on your system before you install Solaris Resource Manager 1.3.

If you're running Solaris Resource Manager on Solaris 8, you must have patch 108995-04 (or greater) installed on your system. If you don't have this patch installed, the installation script will automatically install it on your system before installing the resource capping daemon packages.

If you are running Solaris Resource Manager on Solaris 7, you should install patch 109256-01. This patch fixes bug 4320903 by preventing the `srmadm` utility from accepting negative values, which are invalid, for the `delta` and `maxusage` tunable parameters. If these parameters are set to invalid values, a Solaris 7 system installed with Solaris Resource Manager can become unusable.

Prior to installing Solaris Resource Manager on your Solaris 2.6 *SPARC Platform Edition* 5/98 system, install these patches:

- KU patch 105181-11 (or greater), which contains the kernel enhancements necessary to enable Solaris Resource Manager in the Solaris 2.6 environment.
- Patch 107945-01, which fixes bug 4320903 by preventing the `srmadm` utility from accepting negative values, which are invalid, for the `delta` and `maxusage` tunable parameters. If these parameters are set to invalid values, a Solaris 2.6 system installed with Solaris Resource Manager can become unusable.
- Patch 108192-02, which fixes bug 4191878 that affects the `srmuser` utility when it is being called from `ksh`. When `srmuser` is used to start processes and put them in the background, the `cpu.usage` and `cpu.accrue` lnode attributes don't get updated, and as a result these processes can be improperly scheduled.
- Patch 106123-04 (or greater), which is needed to display the Solaris Resource Manager man pages contained in the `SUNWsrmm` package on Solaris 2.6 systems.

Note that the Solaris 7 5/99 release incorporates KU patch 106541-04, which contains the kernel enhancements necessary to enable Solaris Resource Manager in the Solaris 7 environment. If the patch for the release you are running is revised in the future, you might want to install the updated version on your system.

Using Online Man Pages

To view the Solaris Resource Manager man pages using the `man` command, add `/usr/srm/man` to your `MANPATH` environment variable.

```
MANPATH=/usr/share/man:/usr/srm/man
```

If the `MANPATH` is not set in the individual user's environment, the `man` command defaults to `/usr/share/man` only. The order in the `MANPATH` specifies the search order. `/usr/share/man` will be searched first. If the requested man page is found there, `man` does not continue to search the `MANPATH` unless the `-a` option is used.

For example, to use `man -a` to find `brk(2SRM)`, type:

```
man -a brk
```

To display the Solaris base operating system man page `brk(2)`, type:

```
man -s2 brk
```

For additional information on using online man pages, see `man(1)`.

Bugs

- 4191045 (This bug is only applicable to Solaris 2.6 systems.) The script `nolnode` could decrease server performance significantly

  When a user without an lnode logs in to the system, the system executes the `nolnode` script to create an lnode for the user. When there are a large number of users without lnode logins who log in at the same time, the lnode creation may become a contention. If the system administrator expects that a large number of users without lnodes will be logging in, he should create the lnodes for the users ahead of time. Refer to `/usr/srm/unsupport/passwd_lnodes` for information on how to create lnodes using a script.

- 4191121 (This bug is only applicable to Solaris 2.6 systems.) `limreport`: Expression syntax for date using { . . . } dumps core

  Do not use:

  ```
  limreport 'lastused > {1998111812:00}' '%s %f \n' lname
  cpu.usage
  ```

  Do use:

  ```
  limreport 'lastused > 1998/11/1812:00' '%s %f \n' lname
  cpu.usage
  ```

- 4191878 (This bug is only applicable to Solaris 2.6 systems.) Processes started under `srmuser` are not scheduled properly on multi-processor and single-processor systems

  This problem occurs when you start an application in the background with `srmuser`(1SRM), using `ksh`(1). For example, if *userA* runs:

  ```
  # srmuser userB job &
  ```

  in the background using `ksh`, the CPU usage will not be charged to *userB*. The workaround for this problem is to use `sh`(1) or `csh`(1), or run the `srmuser` command in the foreground:

  ```
  # srmuser userB job
  ```

- 4191130 (This bug is only applicable to Solaris 2.6 systems.) `limreport`: `preserve` output incompatible with `limadm set -f`

  The output of the `limreport` command's `preserve` option separates attributes with a comma. However, the input to `limadm set -f` requires colons.

  The workaround is to pipe the output of `limreport` through "sed 's/,/:/g" as shown in this example:

  ```
  # limreport 'lname=="u1"' - lname preserve | sed 's/,/:/g' | limadm set -f -
  ```

- 4191891 (This bug is only applicable to Solaris 2.6 systems.) `limadm` fails to set date attributes

  This doesn't affect the product functionality.

- 4193731 (This bug is only applicable to Solaris 2.6 systems.) Corrupt Solaris Resource Manager database will be silently ignored or overwritten

  If the `/var/srm/srmDB` lnode database file is overwritten, such as during an `fsck` after a system panic or hang, Solaris Resource Manager will not detect the corruption during reboot unless it occured in the `root` lnode. (Solaris Resource Manager cannot detect the removal or truncation of the lnode database.) If no problem is detected, the system will silently reboot with the corrupted database, unless it has been removed or truncated to a file of size 0; then the system will silently overwrite `/var/srm/srmDB` with a default version of the file on reboot. Therefore, you should always keep a backup copy of the latest `/var/srm/srmDB` file in case the system copy becomes corrupted or is mistakenly removed. This will minimize downtime due to database problems.

  Note – You will know that corruption has been detected by the system if it does not enable Solaris Resource Manager or open the database. You will still have to replace the corrupted database with a backup of the latest working version before you can enable Solaris Resource Manager functionality.

- 4255564 `terminal.usage` and `terminal.accrue` not working for `liminfo -c`

When a machine is booted for the first time with Solaris Resource Manager installed, the limdaemon program does not get to the point where it updates the terminal.usage and terminal.accrue lnode attributes since the lnode database /var/srm/srmDB has just been created. If you can't reboot your system with an existing lnode database file, try the following workaround:

1. Become root.
2. Terminate the currently running limdaemon:

   # **/usr/srm/lib/limdaemon -k**
3. Run limdaemon again:

   # **/usr/srm/lib/limdaemon**

- 4189560 Daemons shouldn't be attached to root lnodes

- 4189582 /etc/rc2 and /etc/rc3 need to be modified to support srm

  Chapter 10, "Troubleshooting," of the *Solaris Resource Manager 1.3 System Administration Guide* and bugid 4189560 describe the problems that can arise if processes (particularly system daemons) are allowed to run attached to the root lnode. The guide suggests editing the system initialization scripts to add an srmuser(1SRM) command to commands that start a daemon process. However, this can be a burden since a large number of files need to be edited, and the practice could inhibit the ability to integrate patches into a system later. Therefore, this solution cannot be routinely recommended.

  For Solaris Resource Manager releases after 1.0, the scripts sbin_rc2 and sbin_rc3 provided in the /usr/srm/unsupport directory can be used to partially solve this problem.

- 4192645 Solaris Resource Manager panics when the lnode cache is full

  For every active user there is an lnode in the kernel. There is a cache of lnodes allocated during the initialization of Solaris Resource Manager. The cache size depends on the tunable parameter *SRMLnodes*. The default value of *SRMLnodes* is calculated as follows:

  SRMLnodes = nproc/ShareProcsPerUid + ShareLnodesExtra

  The default value of *ShareProcsPerUid* is 4 and that of *ShareLnodesExtra* is 20. When the number of active users exceeds the value in *SRMLnodes*, the system panics.

  The workaround is to tune *SRMLnodes*, using a higher value.

Known Problems

The following problem only applies to Solaris 2.6 systems. However, you can install patch 107308–12 to correct the problem on Solaris 2.6 *SPARC Platform Edition* systems. On Solaris 7 systems, it is fixed in CDE v1.3 build 19.

A signal race condition prevents `dtlogin` from restarting in CDE
   If the current scheduler's behavior is changed, it will uncover a race condition in
   the signal that is used to communicate between `dtlogin` and `Xsun`. This can
   prevent `dtlogin` from restarting after exiting a CDE session. To avoid this problem
   under Solaris Resource Manager, use `dispadmin(1MSRM)` to set a smaller time
   quantum.

   Extract the current time quantum parameter:

   # **dispadmin -c SHR -g >** */tmp/dispadmin.out*

   /tmp/dispadmin.out should look like:

```
#
# (SHR) SRM Scheduler Configuration
#

Resolution=1000                 # Resolution
Quantum=110                     # Global time quantum for all processes
```

   Edit *dispadmin.out* and change `Quantum` to `50`. Input the change:

   # **dispadmin -c SHR -s** */tmp/dispadmin.out*

Errata

The latest version of the `srmuser(1SRM)` man page is in the *Solaris Resource Manager
1.3 Reference Manual* in the Solaris Resource Manger 1.3 Collection.

AnswerBook2 Documentation Server

Solaris 2.6 and Solaris 7 5/99 Only

Solaris 2.6 customers using Solaris Resource Manager *must* install the AnswerBook2
Version 1.4 Documentation Server included on the product CD. This version enables
you to view the SGML man pages in the Solaris Resource Manager 1.3 Collection. All
AnswerBook™ collections you might have previously installed will still be viewable;
the new server is compatible with Solaris 2.6 and Solaris 7 documentation sets.

If you are running the Solaris 7 5/99 release, you received the AnswerBook2 Version 1.2 Documentation Server with your operating environment. You should also install the AnswerBook2 Version 1.4 Documentation Server from the Solaris Resource Manager CD to take advantage of the improvements and bug fixes made to this later version.

Note – If an AnswerBook server is currently installed on your system, it must be removed before you install the version included on the product CD. See "Upgrading an Existing AnswerBook2 Server" on page 14.

Once you have installed the server, see the `AB2Server.HTML` file in the: `/SolarisResourceManager_1.3/Solaris_2.6+/common/Docs/locale/C` directory and online HELP for additional instructions on setting up an AnswerBook2 server and viewing documents.

Note – When you install the AnswerBook2 server on a Solaris 2.6 system:

- Permissions of `/var` will change from 0775 to 0755
- Attributes will change from `0775 root other` to `0755 bin bin` for these three directories:
  - `/usr/share/lib/sgml`
  - `/usr/share/lib/sgml/locale`
  - `/usr/share/lib/sgml/locale/C`

These changes should not cause any problems to the system. If this is unacceptable, however, you can change the permissions back to their original settings.

Solaris 7 8/99 and 11/99 Only

You received AnswerBook2 Documentation Server Version 1.4.1 with your Solaris 7 release. You should *not* overwrite your current AnswerBook server with the earlier version included on the Solaris Resource Manager CD.

Release notes for your AnswerBook2 server can be found in the Solaris 7 Release Documents Collection on docs.sun.com.

Solaris 8 Only

You received AnswerBook2 Documentation Server Version 1.4.2 with your Solaris 8 release. You should *not* overwrite your current AnswerBook2 server with the earlier version included on the Solaris Resource Manager CD.

Release notes for your AnswerBook2 server can be found in the Solaris 8 Release Documents Collection on docs.sun.com.

AnswerBook2 Documentation Server Version 1.4 Release Notes

These release notes apply to the AnswerBook2 server provided on the Solaris Resource Manager product CD. This server should be used on the Solaris 2.6 and Solaris 7 5/99 releases.

Major New Features

Icons Replaced With Text

Common navigational functions, such as those used to go to the main page of the AnswerBook2 Library or to Print, are now identified with appropriate text rather than icons.

Added Ability to Search and View Collection-Level Information

Users can now access and search information by AnswerBook2 "collections" (a collection of related books). To access collection-level information, click on a collection title on the Library page or click on the collection title displayed just below the navigation area on any book page. To search within a collection, choose the option "Search this Collection" from the search pop-up menu when appropriate.

Documentation Errata

`ab2admin` Man Page Is Out-of-Date (4195648)

The `ab2admin` man page included with the Solaris 2.6 and Solaris 7 operating environments and accessed through the `man` command is slightly out-of-date with the AnswerBook2 version 1.4 server.

For current information, see the `ab2admin` man page included with the AnswerBook2 Help Collection and available through a web browser.

Instructions for Running an AnswerBook2 Server as a CGI Process on an Existing Web Server May Be Incorrect, Depending on Your Server's Configuration (4196931)

The procedural information given in the online Help for "Running the AnswerBook2 Server as a CGI Process" subsection "To Change to Sun WebServer Using CGI" works as described in some environments, but might not be applicable to others.

As stated in the Help, specific details differ by web server. If you use this procedure, you should be thoroughly familiar with your Sun WebServer setup and be able to recognize when your files differ from those identified in the written instructions.

Verification Steps in Procedures for Running an AnswerBook2 Server as a CGI Process Show an Incorrect Path

The configuration of the AnswerBook2 server changed, but the procedure still refers to an old path. In Step 3 of the Netscape™ Server and Sun WebServer procedures, the path to `/Help/C/Help/books/Help` is incorrect.

The correct path is `/Help/C/Help/books/AB2ADMIN`.

Installation and Administration Issues

Upgrading an Existing AnswerBook2 Server

If an AnswerBook2 server is already installed on your system and you want to install a newer version of the server software, shut down the existing server and remove it from your system before installing the new server software. Use the following commands:

```
# /usr/lib/ab2/bin/ab2admin -o stop
# pkgrm SUNWab2r SUNWab2s SUNWab2u
```

Dependency on `iconv` (4204219)

The Solaris operating environment uses the `iconv` utility to convert characters from one code set to another. For the AnswerBook2 server to properly respond to requests from clients in non-English locales (such as European or Asian locales), you must have the `iconv` packages installed on the server's system. These `iconv` packages *must* be installed before you install the AnswerBook2 server software packages:

SUNWciu8	Simplified Chinese `iconv` modules for UTF-8
SUNWhiu8	Traditional Chinese `iconv` modules for UTF-8
SUNWjiu8	Japanese `iconv` modules for UTF-8
SUNWjiu8j	Japanese Java `iconv` modules for UTF-8
SUNWtiu8	Thai `iconv` modules for UTF-8
SUNWuiu8	Generic `iconv` modules for UTF-8

If all the `iconv` packages are not installed, you will see a "dependency" warning when you install the `SUNWab2u` package. Also, the Library page for this server will not display properly (collection titles may be strung together with no book titles displayed). In addition, users might see an Internal Server Plugin Error/TCL script exception error.

The solution is to install the `iconv` packages before you install the AnswerBook2 server software packages. If you install the AnswerBook2 packages first, you will have to remove and reinstall them after you install the `iconv` packages.

For Solaris 2.6 and Solaris 7, the `iconv` packages are available on the Solaris Software CD. Note that the `iconv` packages are part of the Developer System Support cluster, which can be a different system cluster from what is installed on your system (for example, you might have installed the End User System Support cluster on your system).

During Installation, the AnswerBook2 Server Starts Up in the C Locale (4202215)

The `pkgadd` utility is not able to pass environment variables to its child processes. Thus, when you install the AnswerBook2 server software or document collections, the post-install process starts up the AnswerBook2 server in the C locale.

The workaround is to run the AnswerBook2 server in a locale other than C. This is done by restarting the server using the AnswerBook2 administration interface. Use the following commands:

```
# /usr/lib/ab2/bin/ab2admin -o stop
# /usr/lib/ab2/bin/ab2admin -o start
```

AnswerBook2 Server Does Not Support Use of `pkgadd -R` Option

The `pkgadd`(1M) man page says to use the `-R` option of the `pkgadd` utility to relocate a package. Using this option when installing the AnswerBook2 server software gives unexpected results.

The workaround for installing the AnswerBook2 server software in a location other than the default is to use the following format of the pkgadd command:

```
# pkgadd -a none -d . SUNWab2u
```
This causes the utility to prompt you for the location in which you want the software to be installed.

Note – Do not relocate the SUNWab2r and SUNWab2s packages.

Runtime Issues and Known Bugs

AnswerBook2 Print Function Disabled for Asian Locales (4163661)

The AnswerBook2 Print function does not work for Asian (Korean, Simplified Chinese, and Traditional Chinese) documents.

The workaround for printing AnswerBook2 pages in these locales is to use your browser's print function.

Searches That Include a Reserved Word and Punctuation Fail (4191564)

If you search for a reserved word in combination with valid punctuation (such as in.ftpd or in.named), the AnswerBook2 server does not find what you expected it to find. It may return "No matches found," even though matches exist.

As a workaround, because words such as "in" are reserved by the search engine, you must enclose them in double-quotes to search for them. For example: Search for "in.ftpd" rather than in.ftpd.

Related Product Issues

Launching AnswerBook2 Administration in a Browser From CDE or OpenWindows Running the Solaris 2.6 or Solaris 7 Operating Environment (4191114)

In the Solaris 2.6 and Solaris 7 operating environments, invoking `/usr/dt/bin/answerbook2_admin` at the command line launches a web browser with the URL for the AnswerBook2 Administration page on the local AnswerBook2 Documentation Server. You can also access this function from the CDE Front Panel --> Applications --> System_Admin --> AnswerBook2 Admin icon.

If you try to access this function for a Solaris 7 or AnswerBook2 version 1.4 server from a system running the Solaris 2.6 operating environment (or the reverse), it fails with an error message. The following table identifies the version of the `answerbook2_admin` command (by operating environment) and its relationship to the version of the AnswerBook2 Documentation Server.

Server Version	Solaris 2.6	Solaris 7
AB2 v1.0.1 (Solaris 2.6)	OK	Error #2
AB2 v1.2 (Solaris 7 5/99)	Error #1	OK
AB2 v1.4 (on SRM CD)	Error #1	OK

Error #1:   You see this message: The requested template or script "Ab2Admin" could not be found!

Error #2:   You see a "Save As" dialog box.

If you launch `/usr/dt/bin/answerbook2_admin` from the Solaris 2.6 operating environment and the AnswerBook2 server is the Solaris 2.6 version (AnswerBook2 version 1.0.1), the command works as expected. Similarly, if you launch this command from the Solaris 7 operating environment and the AnswerBook2 server is either version 1.2 or version 1.4, there is no error.

The workaround for a Solaris 2.6 server is to enter the URL `http://localhost:8888/cgi-bin/admin/admin`. For a Solaris 7 server, enter the URL `http://localhost:8888/ab2/@Ab2Admin`.

Unexpected Search Results Behavior Using Microsoft Internet Explorer

Using the Microsoft Internet Explorer browser, if you perform a search and click to go to a page that should contain the search term, the page displays but does not necessarily show you the search term. The search term is not highlighted.

The workaround is to reload the page in the browser.