Solaris 9 Maintenance Update 1 Installation Guide

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Contents

CHAPTER 1

Introduction

The *Solaris 9 Maintenance Update 1 Installation Guide* explains how to install and back out the Solaris™ 9 Maintenance Update™ 1 (MU1) software. This guide is for system administrators installing the MU1 software. For late-breaking MU1 issues identified too late to be included in this guide, refer to the *Solaris 9 Maintenance Update 1 Installation Guide* at `http://docs.sun.com`.

If you need more information on general procedures for system administration, refer to the *Solaris 9 System Administrator Collection*.

What Is the Solaris 9 Maintenance Update 1

The Solaris 9 MU1 contains the same set of patches as those prepackaged on the Solaris 9 9/02 software CDs. The MU1 installation automatically updates your system without regressing any patches you have previously installed.

The Solaris 9 MU1 is available as a file for download from the Web.

When to Install the Solaris 9 Maintenance Update 1

If your system is running the Solaris 9 operating environment and you want to apply patches released in the Solaris 9 9/02 operating environment without losing patches you previously applied to your system, install the Solaris 9 MU1. Patches applied using the MU1 can be backed out.

If your system is running the Solaris 9 operating environment, or a Solaris 9 Update release, and you want to fully upgrade to new features and hardware support, install the Solaris 9 9/02 operating environment. The patches applied by installing the Solaris 9 9/02 operating environment will replace any previously installed Solaris 9 patches and cannot be backed out of the release.

Maintenance Updates are primarily designed to update the Solaris operating environment to a known, tested patch-level. If you want to apply a particular patch, and only that patch, do so through your normal support channels.

Note – The name of this product is Solaris 9 MU1, but code or package path names might use Solaris 2.9 or SunOS™ 5.9. Always follow the code or path as it is written in this document.

CHAPTER 2

Installing the Solaris 9 Maintenance Update 1

This chapter describes how to install your Solaris 9 MU1 software. If you want to install the Solaris 9 MU1 software as part of a custom JumpStart™ installation, refer to the *Solaris 9 Advanced Installation Guide*.

Time Considerations

The Solaris 9 MU1 installation time varies depending on:

- CPU speed of your machine
- `install_mu` option you select
- Transfer speed of the hard drive or network you use to access the `install_mu` code and patch set

If you install the MU1 with the backout option disabled, installation will proceed more quickly. However, you will not be able to back out any of the patches MU1 delivers.

Requirements

The MU1 may only be installed on a system running the Solaris 9 operating environment.

Space requirements per file system vary depending on:

- Whether you select the backout option
- The location of the backout directory when saving backout data

- The disk partitions and the space available in each file system versus the patch disk space needed per file system
- Your system's locale
- Whether some of the Maintenance Update patches are already installed on your system

The `install_mu` script performs a space analysis and reports the space needed per file system, including back out space if applicable. The space calculations take several minutes to complete.

The `install_mu` script does not proceed if it determines that space is lacking in one or more file systems. Although the patch installation space needed is calculated fairly precisely, the backout data space need is estimated and the reported need may be higher than the actual need.

If you are certain that you have enough space to apply the patch set (and backout data if desired) and you want to bypass the space calculation, run `install_mu` with the `-f` option.

Installing the Solaris 9 MU1

Solaris 9 MU1 software can only be installed if the system running `install_mu` is already running the Solaris 9 operating environment.

Note – Relocatable root and service areas are not supported in the Solaris 9 MU1.

It is best to reboot your system in single-user mode before installing MU1 because MU1 applies patches to system libraries. Individual systems in a multiuser system will be unstable if any processes have mapped to an unpatched version of a library and later attempt to map to different sections of the old library.

In single-user mode, network services are not available. If the MU1 image is on the network rather than on a CD, you must copy the MU1 image from the network to your local system before booting your system in single-user mode.

If it is not possible to reboot the system in single-user mode or if you do not have enough disk space to make a local copy of the MU1 image, you will need to install MU1 using NFS in multiuser mode. In this case, you should have the system in as quiet a state as possible, without users logged on or running jobs.

When in single-user, or multi-user mode, you must reboot your system after MU1 is installed. Do not use the `exit` command. If `exit` is used, the system is brought to `init 3` and no one can log in until the system is rebooted. If the root user has logged out and no other root users remain logged in, the system must be rebooted. See Chapter 4, *Known Problems*, for more detail.

Note – Be sure that you have backed up your system's operating system before proceeding.

To install the Solaris 9 MU1 software:

1. **Make sure that no important user or system processes are running.**

Note – You must kill the `powerd` process if it is running.

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2. **Exit the current session.**
   The CDE login screen appears.
3. **Click the Options button and select Command Line Login.**
   The system prompts you to log in.
4. **Type your login name as `root` and type the root password:**

```
login: root
password: root password
```

5. **Reboot in single-user mode. From the root shell prompt, type:**

```
# reboot -- -s
```

6. **Type the root password.**
   Check that the system displays the following message and is now in system maintenance mode.

```
Entering System Maintenance Mode

Sun Microsystems Inc. SunOS 5.9 Generic May 2002
#
```

7. **Run `install_mu`.**
   - From a local copy of the MU1 image, type:

```
# cd local_directory
# ./install_mu options
```

   You can use the following options on the command line.

TABLE 2–1 Command-Line Options for `install_mu`

Option	Description
`-d`	Specifies that patches will not be backed up. Using this argument decreases the time to install the software, but it also prevents you from backing out individual patches. Cannot be specified with `-B` option.
`-p` *patchdir*	Specifies directory that includes all the patches.
`-q`	Disables the display of dots that indicate `install_mu` activity.
`-B` *backoutdir*	Specifies that the backout data is saved in the indicated directory. Cannot be specified with the `-d` option.
`-f`	Forces installation of patch set without checking for sufficient disk space. Using this option saves time, but you must use it only if you are certain that you have enough space.

When the installation is complete, the following message appears.

`install_mu completed at` *date_time*`.`

- If you see this message, go to Step 8.
- If you encounter any errors, go to Chapter 5.

8. **Reboot the system by typing:**

```
# sync ; reboot
```

You are then prompted for a login.

Note – To prevent the library conflict problem, you must reboot your system after installing MU1.

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9. **Type your login name and password:**

```
login: login
password: password
```

Identifying the Version of Your Solaris 9 Maintenance Update

To identify the version of your Solaris 9 MU software, type:

```
# cat /etc/release
```

To identify the patches the MU software applied to your system, type:

```
# showrev -p
```

CHAPTER 3

Backing Out the Solaris 9 Maintenance Update 1

If you need to remove one of the patches, you may do so provided that you did not use the `-d` option of `install_mu` during the installation of the Solaris 9 MU1 software.

Instructions for backing out individual patches are located in each patch directory. Patch directories are located in `/var/sadm/patch/`.

Note – Backing out the entire MU is not possible if you selected the `-d` option of `install_mu`.

Backing Out the Solaris 9 MU1

It is best to reboot your system in single-user mode before backing out the MU1. MU1 applies patches to system libraries. Individual systems in a multiuser system will be unstable if any processes have mapped to a patched version of a library and later attempt to map to different sections of the old library.

In single-user mode, network services are not available. You must copy the MU1 image from the network to your local system before booting your system in single-user mode.

If you cannot reboot the system in single-user mode or if you do not have enough disk space to make a local copy of the MU1 image, you need to back out MU1 using NFS in multiuser mode. In this case, you should have the system in as quiet a state as possible, without users logged on or running jobs.

The `backout_mu` script provided by MU1 enables you to back out an entire MU.

To back out the Solaris 9 MU1 software:

1. **Make sure that no important user or system processes are running.**
2. **Exit the current session.**
   The CDE login screen appears.
3. **Click the Options button and select Command Line Login.**
   The system prompts you to log in.
4. **Type your login name as `root` and type the root password:**

```
login: root
password: root password
```

5. **Reboot in single-user mode. From the root shell prompt, type:**

```
# reboot -- -s
```

6. **Type the root password.**
   Check that the system displays the following message and is now in system maintenance mode.

```
Entering System Maintenance Mode

Sun Microsystems Inc. SunOS 5.9 Generic May 2002
#
```

7. **Run `backout_mu`.**
   - From a local copy of the MU1 image, type:

```
# cd local_directory
# ./backout_mu options
```

TABLE 3–1 Command-Line Options for `backout_mu`

Option	Description
`-q`	Disables the display of dots that indicate `backout_mu` activity.
`-B` *backoutdir*	Specifies an alternate directory in which the information required to back a patch out will be held.

   When the backout is complete, the following message is displayed.

```
backout_mu completed at date_time.
```

   - If you see this message, go to Step 8 to complete the backout.
   - If you encounter any errors, go to Chapter 5.

8. **Reboot the system by typing:**

```
# sync ; reboot
```

   You are then prompted for a login.

Note – To prevent the library conflict problem, you must reboot your system after backing out MU1.

9. Type your login name and password:

```
login: login
password: password
```

CHAPTER 4

Known Problems

This chapter describes known problems relating to the installation and use of the Solaris 9 MU1 software.

Installation Bugs

`patchadd` Displays Error Message If a Patch That Supports Multiple Patch Architecture Is Installed (4706994)

While installing the MU1, if you install a patch that supports multiple package architecture, an error similiar to the following benign error message might be displayed in the `//var/sadm/install_data/Maintenance_Update_log`.

```
Installing xxxxxx-yy (x of xx)
See //var/sadm/patch/xxxxxx-yy log for details
grep: can't open pdgabbrev.extension/pkginfo
```

For example, if patch *123456-01* contains the following patch packages:

- `SUNWcar`
- `SUNWcar.u`

the following error message is displayed.

```
grep: can't open SUNWcar.u/pkginfo
```

Workaround: Ignore the error message. The message does not affect the installation of the patch. The message indicates that `patchadd`(1M) doesn't pass the correct parameter to the `remove_PATCH_PROPERTIES()` function.

`install_mu` Does Not Function Correctly When Starting It Using `sh` (4062334)

Because of problems regarding the interactions between `sh(1)` and `ksh(1)`, the `install_mu` utility might fail to install certain patches correctly when you start it using the following command from the command line or from an administrative script:

```
# /bin/sh ./install_mu options
```

Workaround: Execute `install_mu` from the command line or from an administrative script as follows:

```
# ./install_mu options
```

`patchadd` Displays an Error That It Is Terminating

One of the following benign messages might be displayed by `install_mu`:

```
One or more patch packages included in
XXXXXX-YY are not installed on this system.

Patchadd is terminating.
```

Or:

```
Installation of XXXXXX-YY failed:
  Attempting to patch a package that is not installed.
```

These messages indicate that `patchadd` could not find on your system any of the packages that it intended to patch, so it skipped the indicated patch.

The message is displayed when `patchadd` notices a discrepancy installing a patch of one architecture onto a system with a different architecture (for example, a `sun4u` patch on a `sun4m` system.)

This may also be the result of one or more missing packages. The package might have been removed by the administrator, or never installed, as in the case of installing a cluster smaller than the Entire Distribution.

Workaround: Ignore the message.

Cannot `login` if System Is Not Rebooted (4423853)

When installing in single-user mode, do not use the `exit` command when done. You must instead use the `reboot` command. If `exit` is used instead of `reboot`, the following happens:

- The system is brought to `init 3` and you cannot log in until the system is rebooted.
- No other users can log in until the system is rebooted.
- `pam_projects.so.1` dumps core when any user or process tries to log in. The following message is displayed:

```
NOTICE: core_log: in.rshd[1479] core dumped:
    /var/crash/core.in.rshd.1479
```

- If a process attempts to access the `pam_projects.so.1` module, load module messages are displayed on the system console. A message similar to the following is displayed:

```
cron[1433]: load_modules: can not open module
    /usr/lib/security/pam_projects.so.1
```

  These messages are also displayed if MU1 is installed in multi-user mode. In both cases, the messages will disappear once the system is rebooted.

Workaround: If the `exit` command is used after installing in single-user mode, reboot the system.

If the `exit` command is used after installing in multi-user mode and no root users remain logged in, reboot the system.

CHAPTER 5

Error Messages

The screen messages displayed during the execution of `install_mu` and `backout_mu` do not include all errors that might have occurred. Therefore, check the detail log file for additional information about any patches or packages that were not installed or backed out.

```
# more /var/sadm/install_data/log_file.mu_version_name.date_time
```

In this example:

- *log_file* is the name of the log file for the process you completed. For install, it is `Maintenance_Update_log`. For backout, it is `MU_Backout_log`.
- *mu_version_name* is the name of the MU (it is `Solaris_9MU1` for MU1).
- *date_time* is the designated date and time copied from `date +%y%m%d%H%M%S` (*yyyymmddHHMMSS* or *year-month-day-hour-minute-second*).

Note – `/var/sadm/install_data/`*log_file* is a symbolic link to the most recent MU log file.

Note – You will see only the error text when the message appears, not the error code number included here. The error code numbers are included here in case you are writing a script that calls the `install_mu` or `backout_mu` and your script needs to know the return values for the failure conditions.

`signal detected.`

`install_mu (backout_mu) is terminating.`

Explanation and recommended action: (Error Code 1) You interrupted `install_mu` (or `backout_mu`) by pressing `Control-C`. Reinvoke the program. If you reinvoke `install_mu`, error messages about previously applied patches will appear in the log file. Ignore the error messages.

`install_mu (backout_mu) is unable to find the INST_RELEASE file for the target file system. This file must be present for install_mu (backout_mu) to function correctly.`

Explanation and recommended action: (Error Code 2) The program cannot find the file `/var/sadm/system/admin/INST_RELEASE` on the system. The system has become corrupted. The system must be reinstalled.

`ERROR: Cannot find` *`$xcommand`* `which is required for proper execution of install_mu (backout_mu).`

Explanation and recommended action: (Error Code 3) `install_mu` and `backout_mu` require certain system utilities (for example `awk, sed, grep`) to be present in the `/usr/bin` and `/usr/sbin` directories. One of these utilities is missing. Contact your system administrator for assistance.

`The -B and -d arguments are mutually exclusive.`

Explanation and recommended action: (Error Code 4) The `-d` option requests that no backout data be saved. The `-B` option specifies a directory to store backout data. You cannot use these two options together. Reinvoke `install_mu` with only one of these options.

`The -p parameter must be a directory.` *`$uPATCHDIR`* `is not a directory.`

Explanation and recommended action: (Error Code 5) You selected the `-p` option and supplied a path that is not a valid directory. Reinvoke `install_mu` (or `backout_mu`) with a valid path to the `-p` option.

`The -B parameter must be a directory.` *`$1`* `is not a directory.`

Explanation and recommended action: (Error Code 6) You supplied an option to `-B` that is not a directory. Reinvoke `install_mu` (or `backout_mu`) with a valid path to the `-B` option.

`Permissions on backout directory` *`$BACKOUTDIR`* `not adequate.`

Explanation and recommended action: (Error Code 7) You supplied an option to `-B` that is not a writable directory. Contact your system administrator for assistance.

`Invalid option.`

Explanation and recommended action: (Error Code 10) You selected an unrecognized option. Read the usage message displayed and reinvoke `install_mu` (or `backout_mu`).

`Can't write to Log File:` *`$LOGFILE`*

Explanation and recommended action: (Error Code 11) `install_mu` and `backout_mu` need to write its log into the `/var/sadm/install_data` directory. Check that the `install_data` directory is writable, then reinvoke `install_mu` (or `backout_mu`).

`SUNWcar (core architecture root) package does not exist in /var/sadm/pkg.`

Explanation and recommended action: (Error Code 12) The `/var/sadm/pkg/SUNWcar` directory is missing on the system. Your system has become corrupted. Contact your system administrator for assistance.

`install_mu (backout_mu) only supports the sparc architecture. install_mu (backout_mu) has detected ARCH=`*`$LPROC`*

Explanation and recommended action: (Error Code 13) You ran install_mu (or backout_mu) on a system whose architecture is not SPARC. Reinvoke install_mu (or backout_mu) on a SPARC platform.

`-p parameter does not point to a directory containing a .order file. Looked in` *`$uPATCHDIR`* `and in` *`$uPATCHDIR`*`/MU/sparc/Patches.`

Explanation and recommended action: (Error Code 14) You provided a path to a patch directory, but install_mu could not find a `.order` file in that directory, which it needs to determine the correct patch installation order. install_mu looked in the *$path_you_specified* and in the *$path_you_specified*/MU/sparc/Patches. Check for the existence of a `.order` file and reinvoke install_mu.

`install_mu cannot locate patch order (.order) file. Paths searched: ./sparc/Patches, MU/sparc/Patches, ./`*`$uPATCHDIR`*`/MU/sparc/Patches.`

Explanation and recommended action: (Error Code 15) You did not supply install_mu (or backout_mu) with the `-p` option to identify the patch directory and install_mu (or backout_mu) could not locate the patch directory. Reinvoke install_mu (or backout_mu) with the `-p` option.

`You must be root to execute this script.`

Explanation and recommended action: (Error Code 16) You need root privileges to run `install_mu` or `backout_mu` because only user root can apply and remove patches. Reinvoke the program as root.

`install_mu (backout_mu) can only patch version 2.9 systems. Target system is version` *`$TrgOSVers`*`.`

Explanation and recommended action: (Error Code 17) You asked `install_mu` to apply patches to a system not running Solaris 9, or you asked `backout_mu` to back out patches from a system not running Solaris 9. `install_mu` and `backout_mu` must be run on a Solaris 9 system.

`Not enough disk space to apply entire patch set.`

Explanation and recommended action: (Error Code 22) `install_mu` analyzed your system and determined that not enough disk space was on one or more file systems to install the entire patch set. Make disk space available in the deficient file systems reported and reinvoke `install_mu`. If you believe that you have enough disk space to apply the Maintenance Update, reinvoke `install_mu` with the `-f` option.

`Not enough disk space to save patch backout data.`

Explanation and recommended action: (Error Code 23) `install_mu` analyzed your system and determined that not enough disk space was in the backout directory to save patch backout data. Select a backout directory with enough space, then reinvoke `install_mu`. If you believe that you really have enough disk space in the backout directory, reinvoke `install_mu` with the `-f` option.

`Dry run disk space check failed.`

Explanation and recommended action: (Error Code 24) `install_mu` invokes `pkgadd` with a special option to check for sufficient disk space. `pkgadd` failed, probably because `/` or `/var` is very low on disk space or because your system has become corrupted. Contact your system administrator for assistance.

`The -f and -D options are mutually exclusive.`

Explanation and recommended action: (Error Code 25) The `-f` option instructs `install_mu` to skip the dry-run disk space calculation phase. The `-D` option requests that only the dry-run calculations be made. Choose one option, but not both.

`Cannot find state file. Looked for a file of the form /var/sadm/install_data/.mu_state.{`*`$root_or_usr.date_time`*`}.`

Explanation and recommended action: (Error Code 27) `backout_mu` requires a file containing a list of the patches `install_mu` applied in order to know which patches to back out. If this file is missing, `backout_mu` cannot function. To remove the MU1 patch set, run the `backout_mu` program from the MU1 software distribution.