



Creating A Custom DVD For The Sun SPARC OS

Project Functional Specification

Creating Boot DVD's for Solaris 8, 9, and 10

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Reference Documents

- mkisofs website: <http://cdrecord.berlios.de/old/private/mkisofs.html>
- cdrecord website: http://freshmeat.net/redirect/cdrecord/35795/url_homepage/cdrecord.html
- BigAdmin System Administration Portal: <http://www.sun.com/bigadmin/home/index.html>
- Sun BluePrints: <http://www.sun.com/blueprints/>

1 Creating Boot DVD's for Solaris 8, 9, and 10

1.1 Introduction

This document has been provided to help Customers, Technical staff, and Support individuals understand what is required in order to make a bootable CD/DVD under Solaris. It has been provided purely as a courtesy to Customers who may need help in creating a DVD or Custom Boot DVD under the Solaris environment and Partners Data Systems does not take any responsibility for misquoted information, technical inaccuracy, or any problems that may be associated with using this document. If an error is found in this document, or comments and recommendations on any of the procedures herein wish to be made, please contact Partners Data Systems Support at support@partnersdata.com. It is the focus of this document to walk one through the entire process of creating a generic image of a Solaris Installation Boot DVD to creating a Custom Bootable Jumpstart DVD as well as to troubleshoot any issues that may arise while walking through the entire process of generating the DVD for use.

Unless denoted, Sun makes no distinction between a CD and a DVD because the filesystems are nearly identical in layout. A DVD, for all general purposes of this document is nothing more than a CD with approximately 4.7GB of storable Data as opposed to the 650MB that a CD can handle. Because of this, the term CD and DVD and be used interchangeably.

1.2 About Partners Data Systems, Inc and SurfBURNER Software

Partners Data Systems, Inc. specializes in High Availability Storage and Backup Automation Solutions. Whether your company is a New Startup, University Campus, Government Organization or an Industry Leading Fortune 500, we can assist you with implementing a reliable storage and backup solutions while saving you time and money.

SurfBURNER DVD-RW / CD-RW Authoring Software for Solaris is a dynamically written application for Solaris 8 and up which enables easy installation, drag-and-drop functionality, automatically sizes file and directories to help determine the size of the disk, quick and full erase features for DVD+/-RW and CD-RW media.

1.3 Obtaining Support

If you need immediate support please contact us at support@partnersdata.com or telephone at 800-550-3005 for more information.

SurfBURNER Datasheet: <http://www.partnersdatasystems.com/pdf/SurfBURNER%20Datasheet.pdf>

1.4 Testing Conditions

The testbed for this document was done using a Blade 1500 with an internal SurfSTOR DVD/CD Writer for Sun Solaris running Solaris 10 SPARC 06/06. The system was updated with the latest security patches and 10_Recommended Patch Cluster as of 10/06.

2 Requirements: Solaris 8, 9, and 10

Since there are various limitations to how DVD's can be created, certain patches must be downloaded and applied in order to be able to create a DVD that is greater than 2GB in size.

2.1 Solaris 8 SPARC Requirements

1. Download and install patches: 107465-02 and 108974-16 are required at a minimum for a DVD to be made, but it is recommended that one install the latest 8_Recommended Patch Cluster.
2. Solaris 8 Installation Media
3. A Filesystem with at least 2GB of available space where temporary files and images can be written to before being burned to disk.
4. An internal or External SurfSTOR DVD/CD Writer
5. A blank DVD-R media

2.2 Solaris 9 SPARC Requirements

1. Download and install patches: 117134-01, 116546-07 at a minimum as these are required for a DVD beyond 2GB to be made. It is recommended that the latest 9_Recommended Patch Cluster or run the command # smpatch update be run from an Xterm as root.
2. Solaris 9 or greater Installation Media
3. A Filesystem with at least 4GB of available space where temporary files and images can be written to before being burned to disk.
4. An internal or External SurfSTOR DVD/CD Writer
5. A blank DVD-R or DVD-RW media

2.3 Solaris 10 SPARC Requirements

1. Download and install patches: 119081-23 and 119534-09 at a minimum as these are required for a DVD beyond 2GB to be made. It is recommended that the latest 10_Recommended Patch Cluster or run the command # smpatch update be run from an Xterm as root.
2. Solaris 10 Installation Media
3. A Filesystem with at least 4GB of available space where temporary files and images can be written to before being burned to disk.
4. An internal or External SurfSTOR DVD/CD Writer
5. A blank DVD-R media

3 Downloading & Burning a DVD ISO Image from Sun

The following is outlined at Sun's site at: www.sun.com/software/solaris/download_instruction.xml, but the basic steps for taking the 5 files downloaded from Sun's site at:

<http://www.sun.com/software/solaris/get.jsp> and creating a single, unified ISO image that can be burned to disk. The following does not include options for creating a custom Flash Archive (FLAR), if a FLAR is desired, please see [Chapter 4](#).

If the software is obtained via download, selecting DVD has an additional benefit: you only have to burn a single disk. However, many utilities found on the Internet or included with various operating systems, do not function properly with files that exceed 2GB in size, and a DVD image can be much larger than that. To minimize this problem, Sun has broken the Solaris 10 OS DVD image into five parts. To reconstitute the full DVD image:

NOTE: Once one has downloaded an .ISO file, checking the ISO files to see if it has been corrupted during the download, before burning it to a DVD is recommended. For that, one will need to compare checksums of the downloaded file against the file found on the download server. There are various free, utilities available for all popular operating systems (for example Windows, Solaris OS, Linux) that enable this. With Solaris 10 and beyond, use the `digest(1)` application supplied with the Solaris 10 operating system.

Example1:

```
# digest -a md5 filename
```

This will create an md5 sum that can compared against the published value at the download site.

Another option is to install the free downloads of md5-sparc or md5-x86 available at <http://sunsolve.sun.com/md5/md5.tar.Z>.

Make sure to use the same kind of media as supported by your DVD burner. There are CD-R, CD-RW, DVD-R, and DVD-RW disks that can be used. Do not use DVD+R DL (dual layer) discs.

3.1 Creating the Image

1. Download all 5 parts of the image. Each of these parts is an individual slice of the DVD Filesystem, or an individual CD that can be burned on 5 separate CD's.
2. Use the command: `#unzip sol-XX-u2-ga-sparc-dvd-iso-Y` where XX is the OS version and Y is the part. Unzip all of the files into a single directory.
3. In order to make a single DVD image, instead of 5 separate CD's, one will need to concatenate them all sequentially at once and redirect the output to a single file. An example of this is using the Solaris 10 distribution is as follows:

```
# cat sol-10-u2-ga-sparc-dvd-iso-a sol-10-u2-ga-sparc-dvd-iso-b sol-10-u2-ga-sparc-dvd-iso-c sol-10-u2-ga-sparc-dvd-iso-d sol-10-u2-ga-sparc-dvd-iso-e > sol-10-GA-sp-dvd.iso
```

4. The end result is a true ISO image that can be burned to DVD.
5. To burn the ISO image, insert a blank DVD-R media into the SurfSTOR DVD/CD Writer
6. Open a terminal window under Solaris, su to root, and turn off volmgt as follows:

```
# su -  
# /etc/init.d/volmgt stop
```

7. Now burn the image to disk by running the cdwriter program from the SURFBurner Directory such as follows:

```
# /opt/PDSIdvdrw/bin/cdwriter dev=X,Y,Z -dao -v -eject sol-10-GA-sp-dvd.iso
```

NOTE: dev=X,Y,Z is the device path to your particular DVD+/-RW and can be determined by running the following command:

```
# /opt/PDSIdvdrw/bin/scan.sh
```

The output of the scan.sh should appear similar to the following:

```
scsibus1:  
1,0,0 100) " " " NON CCS Disk  
1,1,0 101) *  
1,2,0 102) *  
1,3,0 103) *  
1,4,0 104) *  
1,5,0 105) *  
1,6,0 106) 'PLEXTOR ' 'DVDR PX-716A ' '1.08' Removable CD-ROM
```

In this case, 1,6,0 is the target of dev=X,Y,Z and should be used in the above cdwriter command to make the DVD.

8. Depending on the amount of data being recorded to the device, this process may take up to an hour to record to disk. Once completed however, put the CD into the drive again and mount it using the following command:

```
# mount -F hsfs -o ro /dev/dsk/c0t6d0s0 /cdrom
```

9. Now change directories into the /cdrom folder and list the contents using the ls command.

NOTE: On bootable disks, there are various slices, not all of which are viewable using the mount command. It is advisable to try mounting slices 1 and 2 (ex: c0t6d0s1 and c0t6d0s2) as further tests before trying to boot the CD or DVD.

4 Creating a Custom Bootable DVD Image

The following process is designed to help a Solaris Administrator in generating a bootable Solaris Flash Archive (FLAR) image that can be burned just as a plain disk as in [Chapter 3](#), or manipulated into being a completely customized Solaris Installation.

4.1 Making a Custom JumpStart FLAR Image

Start by downloading the image files from Sun's site as outlined in the beginning of [Chapter 3](#). The following process works for and has been tested on Solaris 9 and 10.

1. Create the image as outlined in Chapter 3.

```
# cat sol-10-GA-sparc-dvd-iso-? > sol-10-GA-sparc-dvd.iso
```

2. Check size of isofile sol-10-GA-sparc-dvd.iso

```
# ls -l sol-10-GA-sparc-dvd.iso
```

3. Configure all ISO images to referable file systems, and mount to specific directory.

```
# lofiadm -a <DOWNLOADED DIRECTORY>/sol-10-GA-sparc-dvd.iso /dev/lofi/1
```

```
# mount -F hsfs -o ro /dev/lofi/1 <MOUNT DIRECTORY1>
```

4. Following the "Jumpstart Install" procedure to configure the install server.

```
# cd /mnt/Solaris/Tools
# ./setup_install_server /IMAGE_DIR_PATH/IMAGE_NAME
Verifying target directory...
Calculating the required disk space for the Solaris_10 product
Calculating space required for the installation boot image
Copying the CD image to disk...
Copying Install Boot Image hierarchy...
Install Server setup complete
```

```
# du -sk /image_s10/s10-GA-DVD
2741638 /image_s10/s10-GA-DVD
```

Note: In the above example IMAGE_DIR_PATH=image_s10 and IMAGE_NAME=s10-GA-DVD, so please note your directory path and image name may differ.

Optional (Download the following files to add more functionality or learn more about this product.)

Solaris 10 OS Companion CD, Multi-language (sol-10-ccd-GA-sparc-iso.zip, 428.60 MB)

Once the copy is complete, you should have one image ready to be burned to a DVD.