Solaris Transition Guide Update

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Contents

Preface

The *Solaris™ Transition Guide Update* provides current information on topics documented in the *Solaris Transition Guide*. These books offer information for customers transitioning from SunOS™ release 4 to SunOS releases 5.7 and 5.8.

The *Solaris Transition Guide* was originally delivered with the Solaris 7 operating environment to cover differences between SunOS release 4 and SunOS release 5.7. That guide is being re-delivered for Solaris 8 to correct minor technical flaws and problems in table formatting. The basic content of the guide remains unchanged as it relates to SunOS release 4 and SunOS release 5.7 differences.

The *Solaris Transition Guide Update* documents changes and enhancements to SunOS release 5.8 which possibly affect users, system administrators and developers transitioning from SunOS release 4. The update also provides references to Solaris documentation with current information on topics covered in the *Solaris Transition Guide*. Use the update with the *Solaris Transition Guide* to identify areas of functionality affected by changes made between SunOS release 4 and SunOS release 5.8.

The structure of the *Solaris Transition Guide* has been preserved in this update to enable easy comparison between the two books.

Who Should Use This Update

This update is for users, system administrators, and software developers who are making the transition from SunOS release 4 to a SunOS release 5.8 work environment.

What to Expect From This Update

The purpose of this update is to direct you to current information on topics covered in *Solaris Transition Guide* and to overview features added or changed for SunOS release 5.8. Because the *Solaris Transition Guide Update* is an overview that covers a wide range of topics, detailed information and procedures are not included. The update references the *Solaris Transition Guide* and other Solaris 8 documentation to consult for more information.

How This Update Is Organized

This guide is divided into 2 parts with 19 chapters.

Part 1: Transition Information for Users and System Administrators

You can use this part to find current information for users and system administrators on the transition from SunOS release 4 to a SunOS release 5.8 computing environment.

The part contains:

- Chapter 1 references the *Solaris Transition Guide* on the benefits of migrating to the Solaris operating environment.
- Chapter 2 provides links to sections of the update with information on features added or enhanced in SunOS release 5.8.
- Chapter 3 includes references to current information on migrating from SunOS release 4 to a SunOS release 5.8 operating system.
- Chapter 4 briefly discusses the Source Compatibility Package and the Binary Compatibility Packages that enable you to use SunOS release 4 commands and applications during your migration.
- Chapter 5 describes the major differences between SunOS release 4 and Solaris 8 security. The chapter also provides references to information that supersedes the *Solaris Transition Guide*.
- Chapter 6 provides udated information on the on setting up the local user environment after installing the Solaris 8 Operating Environment.

- Chapter 7 describes SunOS release 5.8 changes to device administration and provides updated references to information included in the *Solaris Transition Guide*.
- Chapter 8 describes changes to booting and shutting down a system.
- Chapter 9 explains changes to file systems, directories, and files. It also describes changes to file system administration.
- Chapter 10 provides current information on the `SUNWhinst` package used to add SunOS release 4 to a SunOS release 5 server.
- Chapter 11 describes changes to printer Solaris 8 printer administration and provides updated references to information on serial port management.
- Chapter 12 outlines changes to the network services.
- Chapter 13 provides updated information on NIS, NIS+ and the domain name system (DNS).
- Chapter 14 provides references Solaris documentation on CDE.

Part 2: Transition Information for Developers

You can use this part of the update to find current information for developers on transitioning from SunOS release 4 to a SunOS release 5.8 programming environment.

This part contains the following chapters:

- Chapter 15 discusses which capabilities have been added to or removed from compilers, linkers, and debuggers.
- Chapter 16 discusses changes to tools and resources for the development environment including changes to `ioctl`() requests, `ptrace`() request values, libraries, and the make and SCCS facilities.
- Chapter 17 discusses Solaris 8 networking features as they relate to the programming environment. It also describes improved internationalization features.
- Chapter 18 provides references to Solaris documentation on system and device configuration.
- Chapter 19 provides references Solaris documentation on changes to device driver interfaces, the `devinfo` command, porting considerations, STREAMS, and the Solaris 8 driver architecture.

Related Books

For more information on the Solaris 8 operating environment, see the following documentation:

- Solaris 8 Installation Collection

  Solaris 8 Advanced Installation Guide
  Solaris 8 (SPARC™ Platform Edition) Installation Guide
  What's New in the Solaris 8 Operating Environment

- Solaris 8 System Administrator Collection

  Binary Compatibility Guide

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  NIS+ Transition GuideSolaris Naming Administration Guide
  Solaris Naming Setup and Configuration Guide
  Solaris Transition Guide
  System Administration Guide, Volume 1
  System Administration Guide, Volume 2
  System Administration Guide, Volume 3

- Solaris 8 Software Developer Collection

  International Language Environments Guide
  Linker and Libraries Guide
  International Language Environments Guide
  Source Compatibility Guide
  STREAMS Programming Guide
  System Interface Guide
  Writing Device Drivers

Ordering Sun Documents

Fatbrain.com, an Internet professional bookstore, stocks select product documentation from Sun Microsystems, Inc.

For a list of documents and how to order them, visit the Sun Documentation Center on Fatbrain.com at `http://www1.fatbrain.com/documentation/sun`.

Accessing Sun Documentation Online

The docs.sun.com[SM] Web site enables you to access Sun technical documentation online. You can browse the docs.sun.com archive or search for a specific book title or subject. The URL is `http://docs.sun.com`.

What Typographic Conventions Mean

The following table describes the typographic changes used in this book.

TABLE P–1 Typographic Conventions

Typeface or Symbol	Meaning	Example
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls –a` to list all files. `machine_name% you have mail.`
`AaBbCc123`	What you type, contrasted with on-screen computer output	`machine_name%` **`su`** `Password:`
AaBbCc123	Command-line placeholder: replace with a real name or value	To delete a file, type **`rm`** *filename*.
AaBbCc123	Book titles, new words, or terms, or words to be emphasized.	Read Chapter 6 in *User's Guide*. These are called *class* options. You must be *root* to do this.

Shell Prompts in Command Examples

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

TABLE P–2 Shell Prompts

Shell	Prompt
C shell prompt	`machine_name%`
C shell superuser prompt	`machine_name#`
Bourne shell and Korn shell prompt	`$`
Bourne shell and Korn shell superuser prompt	#

Getting Help from Sun Microsystems WWW Site

You can get additional Solaris transition information by accessing the following URL:

`http://www.sun.com/smcc/solaris-migration/index.html`

The Solaris Migration Initiative home page is a central point for the distribution of tools, documentation, and information to aid you in your transition from SunOS release 4.

PART I

Transition Information for Users and System Administrators

Use this part of the update to find current information for users and system administrators on the transition from SunOS release 4 to a SunOS release 5.8 computing environment.

CHAPTER 1

Introduction

The Solaris operating environment enhances your system's capabilities with powerful tools and features. The chapter in the *Solaris Transition Guide* discusses the benefits of migrating to the Solaris operating environment. It also summarizes the principal differences between SVR4 and the Solaris operating environment.

Advantages of Migrating to the Solaris Operating Environment

See the *Solaris Transition Guide*.

Comparison of SVR4 and the Solaris Operating Environment

See the *Solaris Transition Guide*.

CHAPTER 2

Overview of Major Changes

This following sections of this update describe changes and enhancements made to SunOS release 5.8 following the publication of the *Solaris Transition Guide*.

For information on earlier changes from SunOS release 4 to SunOS release 5, see the *Solaris Transition Guide*.

CHAPTER 3

Converting a SunOS 4.x System to the Solaris 8 Environment

This chapter updates information in the *Solaris Transition Guide* on the three-phase process involved in converting a SunOS release 4 system.

The chapter contains:

What's New About Installing

See *What's New in the Solaris 8 Operating Environment*.

What to Do Before You Install Solaris Software

Read "What to Do Before You Install Solaris Software" in *Solaris Transition Guide*. Then carefully review "Getting Started" in *Solaris 8 (SPARC Platform Edition) Installation Guide*.

Backing Up Files and File Systems Before You Install

Read this section in the *Solaris Transition Guide* and carefully review "Backing Up and Restoring File Systems (Overview)" in *System Administration Guide, Volume 1*.

Installing Solaris Software

Install the Solaris 8 software using the software installation procedures given in "Getting Started" in *Solaris 8 (SPARC Platform Edition) Installation Guide*.

Preserve Option

The *Solaris Transition Guide* mentions a preserve option in the interactive installation program that allows you to save existing SunOS release 4 file systems during installation. For procedures on using the interactive installation program to preserve *data on the disk*, see "Using the Solaris 8 Interactive Installation Program" in *Solaris 8 Advanced Installation Guide*.

Restoring Files and File Systems After You Install

Read this section in the *Solaris Transition Guide* and carefully review "Backing Up and Restoring File Systems (Overview)" in *System Administration Guide, Volume 1*.

CHAPTER 4

Using the Compatibility Packages

The Solaris 8 software is neither source nor binary compatible with the SunOS release 4 software. This means that SunOS release 4 programs and user applications based on those releases may not run correctly under the Solaris 8 operating environment. Compatibility packages make it possible for these programs to run on a Solaris 8 system.

This chapter replaces the corresponding chapter in the *Solaris Transition Guide*. It briefly discusses two compatibility packages: the Source Compatibility Package and the Binary Compatibility Package. These packages make the transition easier by enabling you to use SunOS release 4 commands and applications as you migrate to the SunOS release 5 computing environment.

- *Binary Compatibility Guide*
- *Source Compatibility Guide*

Source Compatibility Package

For detailed information about the Source Compatibility Package, see the *Source Compatibility Guide*

Binary Compatibility Package

See the *Binary Compatibility Guide* for procedures about setting up your environment to access this package. This guide also details the limitations of the Binary Compatibility Package.

CHAPTER 5

Security

This chapter updates information in the *Solaris Transition Guide* on changes to security features made after SunOS release 4.

The chapter contains:

What's New in the Solaris 8 Operating Environment

See these sections for information on security features and options implemented for the Solaris 8 release:

Solaris 8 Security Features

Most of the SunOS release 4 security features are available in the current release. The following sections describe changes and enhancements implemented for Solaris 8 release.

Default File System and Directory Permissions

Many system files and directories in the Solaris 8 release have different default ownership and stricter permissions than in previous releases. For complete information, see "Managing System Security (Overview)" in *System Administration Guide, Volume 2*

Note - Before you create packages for the Solaris 8 operating environment, refer to "Managing System Security (Overview)" in *System Administration Guide, Volume 2*.

Solaris 8 Role-Based Access Control

In previous releases, full superuser powers were granted to anyone with the superuser password. In the Solaris 8 operating environment, role-based access control (RBAC) enables administrators to assign limited superuser capabilities to normal users. This is achieved through three new features:

- Authorization—access granted to a restricted function.
- Execution profile—a grouping of authorizations and commands with special attributes. For example, `uid`, `gid`, and `egid`.
- Role—special types of user accounts assigned for the purpose of performing a particular set of administrative tasks.

The next sections describe databases that support the use of roles, authorizations, and profiles. For further information, see "Managing User Accounts and Groups (Overview)" in *System Administration Guide, Volume 1*.

/etc/user_attr

The `user_attr` database is used to store extended security attributes related to users and roles (a special type of user account). Specifically, the database associates users with authorizations, profiles, roles, and account type.

/etc/security/auth_attr

The `auth_attr` database lists and describes authorizations. It identifies associated help files and includes any additional authorization attributes.

/etc/security/prof_attr

The `prof_attr` database lists the available execution profiles and identifies the authorizations and help file associated with each profile.

/etc/security/exec_attr

The `exec_attr` database associates execution attributes with execution profiles. Each entry consists of the security policy in force, a command, and the values for any special attributes, such as real or effective UIDs or GIDs. Note that currently the only valid security policy is suser (superuser).

/etc/security/audit_user

The `audit_user` database stores preselection data for auditing.

Solaris 8 Security Related Documentation

This documentation provides up-to-date information on managing security at the file, system, and network level.

TABLE 5–1 Security Related Documentation

Subject	Book Title	Where to Find it
Managing System Security	*System Administration Guide, Volume 2*	Solaris 8 System Administrator Collection
NIS+ Name Service Authorization, Authentication	*Solaris Naming Administration Guide*	Solaris 8 System Administrator Collection
NIS+ Security	*NIS+ Transition Guide*	Solaris 8 System Administrator Collection

TABLE 5–1 Security Related Documentation *(continued)*

Subject	Book Title	Where to Find it
Secure NFS	*System Administration Guide, Volume 3*	Solaris 8 System Administrator Collection
Secure RPC	*System Administration Guide, Volume 3*	Solaris 8 System Administrator Collection
TCP/IP	*System Administration Guide, Volume 3*	Solaris 8 System Administrator Collection

Other Security Features

The following sections reference documentation that supersedes information in the *Solaris Transition Guide*.

Password Aging Changes

See "Managing User Accounts and Groups (Overview)" in *System Administration Guide, Volume 1* for current information about setting up and maintaining passwords.

Access Control Lists (ACLs)

See "Managing System Security (Overview)" in *System Administration Guide, Volume 2* for current information on ACLs.

Automated Security Enhancement Tool (ASET)

See "Managing System Security (Overview)" in *System Administration Guide, Volume 2* for current information on ASET.

Security Options

The following sections reference documentation that supersedes information in the *Solaris Transition Guide*.

Kerberos 4.0 Security

"Using Authentication Services (Tasks)" in *System Administration Guide, Volume 2* provides step-by-step instructions for setting up Kerberos login authentication.

Sun Enterprise™ Authentication Mechanism (Kerberos V5) Client Support

This feature provides the Kerberos V5 client-side infrastructure, an addition to the Pluggable Authentication Module (PAM), and utility programs that can be used to secure RPC based applications, such as the NFS service. Kerberos provides selectable strong user or server level authentication, integrity, or privacy support. The Kerberos clients can be used in conjunction with Sun Enterprise Authentication Mechanism (SEAM) (a part of SEAS 3.0) or other Kerberos V5 software (for instance, the MIT distribution) to create a complete single network sign-on solution. The section on the "Solaris NFS Environment" in *System Administration Guide, Volume 3* describes Kerberos support for the NFS environment.

Other Security Options

The following sections reference documentation that supersedes information in the *Solaris Transition Guide*.

SunSHIELD Package

For information on the SunSHIELD™ Basic Security Module (BSM) package, see *Trusted Solaris Administration Overview* in the *Trusted Solaris 7 AnswerBook*.

PAM

See “Using Authentication Services (Tasks)” in *System Administration Guide, Volume 2* for step-by-step instructions on administering the Pluggable Authentication Module (PAM).

CHAPTER 6

User Environment Administration

This chapter updates information in the *Solaris Transition Guide* on setting up the local user environment after installing the Solaris 8 operating environment.

The chapter contains:

What's New in the Solaris 8 Operating Environment

New options and utilities have been added to `sendmail` and the *Solaris 8 Reference Manual Collection* has been reorganized.

See these sections for more information:

Selecting a Default Shell

For information on the login shell that runs when you are logged in, see the *Solaris Transition Guide*.

Customizing User Environments

For current information on customizing the user environment, see "Customizing a User's Work Environment" in *System Administration Guide, Volume 1*

For information recreating the look and feel of your SunOS release 4 work environment, see the *Solaris Transition Guide*.

Window Systems

For information on changes previously made in the SunOS release 5 environment, see the *Solaris Transition Guide*.

For current information on using CDE as your Solaris 8 desktop, see:

- *Solaris Common Desktop Environment: User's Guide*
- *Solaris Common Desktop Environment: User's Transition Guide*

User and Group Administration

For information on adding, modifying or removing users and groups, see:

- *Solaris Transition Guide*—SunOS release 4 background information.
- "Managing User Accounts and Groups (Overview)" in *System Administration Guide, Volume 1*

Using Mail

See the *Solaris Transition Guide* for information on changes previously made in the SunOS release 5 environment.

In the Solaris 8 operating environment, `sendmail` 8.10 includes new a option, `MaxHeadersLength`, that limits the length of the sum of all header lines in any given message, which can prevent a denial-of-service attack. Also included is a new version of `mail.local` that implements the Local Mail Transfer Protocol, RFC 2033. This change allows for re-queuing of mail to the recipients that did not receive a message, rather than re-sending the message to all of the recipients if an error occurs. A new file called `/etc/default/sendmail` can be used to store options to start `sendmail` with, so that the options are not touched during a upgrade. In addition, a new utility called `smrsh` increases security by reducing the number of commands that can be run using the `|program` syntax of `sendmail`.

For detailed and current information, see "Mail Services Reference" in *System Administration Guide, Volume 3*.

Using Document Tools

See the *Solaris Transition Guide* for information on differences in:

- Solaris PostScript™ filters and SunOS release 4TransScript filters (T_EX filter `pscat` raster image).
- Solaris and SunOS release 4 `troff` output.

Man Page Organization Differences

Man pages have been changed to be compatible with SVR4 organization. As a result, some sections of the SunOS release 4 man pages have been renamed. For example, `man`(8) is now `man`(1).

The *Solaris 8 Reference Manual Collection* has been reorganized. The following table describes the current sections of the *Solaris 8 Reference Manual Collection*.

TABLE 6–1 Man Page Documentation

Solaris 8 Reference Manual Section	Content
man pages section 1	User commands
man pages section 1M	System administration commands
man pages section 2	System calls
man pages section 3	Basic library functions
	Curses library functions
	Extended library functions
	Library interfaces and headers
	Networking library functions
	Threads and realtime library functions
man pages section 4	File formats
man pages section 5	Standards, environments, and macros
man pages section 6	Demos
man pages section 7	Device network interfaces
man pages section 9	DDI and DKI overview
man pages section 9E	DDI and DKI entry points
man pages section 9F	DDI and DKI kernel functions
man pages section 9S	DDI and DKI data structures

CHAPTER 7

Device Administration

This chapter updates information in the *Solaris Transition Guide* on device administration.

The chapter contains:

What's New in the Solaris 8 Operating Environment

The `devfsadm` command provides an improved mechanism for managing special device files in the `/dev` and `/devices` directories, including support for dynamic reconfiguration events. For more information, see "Device Naming From a Developer's Perspective" on page 86.

The `cfgadm` command is updated in this release to provide SCSI and PCI hot-plugging for supported SCSI and PCI controllers. For more information, see "Dynamic Reconfiguration" on page 39.

Device Naming Conventions

For information on changes made prior to SunOS release 5.8, see the *Solaris Transition Guide*.

For current information, see “What’s New in Disk Management?” in *System Administration Guide, Volume 1*.

Obtaining Disk Information

The commands that report disk information changed in the SunOS release 5.7. `df`(1M) and `du`(1M) are still available, but have changed. `dkinfo`(8), and `devinfo`(1M) are replaced by `prtvtoc` and `sysdef–d`.

See the *Solaris Transition Guide* for detailed information on these changes.

See the following documentation for current information on these commands:

- `df` and `du`—“Managing Disk Use (Tasks)” in *System Administration Guide, Volume 2*.
- `prtvtoc` —“Administering Disks (Tasks)” in *System Administration Guide, Volume 1*.
- `sysdef`—“Displaying Device Configuration Information” in *System Administration Guide, Volume 1*.

Adding Devices to the System

For current information on adding devices to a system, see “Device Management (Overview)” in *System Administration Guide, Volume 1*.

Note - The reconfiguration `boot –r` command, described in the *Solaris Transition Guide*, does not currently remove file system entries for devices that are physically removed from the system. For more information, see `boot`(1M).

Dynamic Reconfiguration

The `cfgadm` command is updated in this release to provide SCSI and PCI hot-plugging for supported SCSI and PCI controllers.

Hot-plugging is the ability to physically add, remove, or replace system components while the system is running. *Dynamic reconfiguration*, available on certain SPARC servers, allows a service provider to remove and replace hot-pluggable system I/O boards in a running system, eliminating the time lost in rebooting. Also, if a replacement board is not immediately available, the system administrator can use dynamic reconfiguration to shut down a failing board while allowing the system to continue operation.

For more information, see "What's New in Device Management?" in *System Administration Guide, Volume 1*.

Using Volume Management

Volume Management, released with the Solaris 2.2 operating environment, mounts all removable media to provide access to CD-ROM and diskette drives under `/vol/dev`.

For more information, see "How Volume Management Works (Reference)" in *System Administration Guide, Volume 1*.

CHAPTER 8

Startup and Shutdown

This chapter updates information in the *Solaris Transition Guide* on changes to booting and shutting down a system.

It contains:

What's New in the Solaris 8 Operating Environment

In this release, dynamic host configuration protocol (DHCP) functionality has been added to boot a system over the network. See "Dynamic Host Configuration Protocol (DHCP)" on page 42 for more information.

Booting

See the *Solaris Transition Guide* for information on changes to SunOS release 4 boot commands and processes.

Note - The reconfiguration `boot –r` command, described in the Solaris Transition Guide, does not currently remove filesystem entries for devices that physically removed from the system. For more information, see `boot`(1M).

See the *System Administration Guide, Volume 1* and *Volume 3* for current information.

Dynamic Host Configuration Protocol (DHCP)

Dynamic Host Configuration Protocol enables you to boot a DHCP server over the network. Network boot technology based on RARP/bootparams is still available. For information on setting up a DHCP server, see "Configuring DHCP Service" in *System Administration Guide, Volume 3*.

`init`

See the *Solaris Transition Guide*.

Using the `init` Command

See "Shutting Down and Booting a System (Overview)" in *System Administration Guide, Volume 1* for current information on the `init` command.

`init` Command Changes

See the *Solaris Transition Guide* for changes to SunOS release 4 run levels.

Changing System Run Levels

For previous information on different run levels, see the *Solaris Transition Guide*. For current information, see "Run Levels and Boot Files (Tasks)" in *System Administration Guide, Volume 1*.

Shutting Down

For previous information on `fasthalt`, `halt`, and `shutdown`, see the *Solaris Transition Guide*. For current information, see “Shutting Down a System” in *System Administration Guide, Volume 1*.

CHAPTER 9

File System Administration

This chapter updates information in the *Solaris Transition Guide* on changes to file system administration.

The chapter contains:

What's New in the Solaris 8 Operating Environment

New features added to the Solaris 8 Operating Environment include:

- The Universal Disk Format (UDF) file system that enables users to exchange data stored on CD-ROMs, disks, diskettes, DVDs, and other optical media. See "Universal Disk Format (UDF) file system" on page 46.
- A new TMPFS-mounted file system, `/var/run`, which provides a repository for temporary system files not needed across system reboots. See "`/var` Directory" on page 49.

- The `coreadm` command that provides flexible core file naming conventions and better core file retention. See “Debuggers” on page 73.

File System Changes

This section gives you information on the Universal Disk Format file system. It also provides an updated reference to current documentation on virtual file systems.

Universal Disk Format (UDF) file system

The Universal Disk Format (UDF) file system is supported in the Solaris 8 Operating Environment. UDF is the industry-standard format for storing information on optical media. It can be used to exchange data between UDF file systems on the following components: CD-ROMs, Disks and diskettes, Digital versatile disc or digital video disc (DVD) – DVD-ROM on supported platforms. The UDF file system is provided as dynamically loadable 32-bit and 64-bit modules. It contains system administration utilities for creating, mounting, and checking the file system. When a UDF file system is mounted, users can read, write, or list files from the device and applications can access UDF file and directories with standard system calls. See the “Using the Universal Disk Format (UDF) File System” in *System Administration Guide, Volume 1* for more information.

Pseudo File Systems

See the “Managing File Systems (Overview)” in *System Administration Guide, Volume 1* for current information on *virtual* file systems.

Added File Systems

See the *Solaris Transition Guide* for SunOS release 5 changes to `/kernel`, `/opt` and `/vol` directories.

Default File Systems and Directories

See “UFS File System Reference” in *System Administration Guide, Volume 1* which supersedes information in the *Solaris Transition Guide*.

Virtual File System Architecture

For current information on virtual file systems, see “Managing File Systems (Overview)” in *System Administration Guide, Volume 1*.

Supported File System Types

For SunOS release 5 information on file system types, see the *Solaris Transition Guide*.

For current information, see “Managing File Systems (Overview)” in *System Administration Guide, Volume 1*.

Cache File System (CACHEFS)

For current information on CacheFS “The Cache File System (Tasks)” in *System Administration Guide, Volume 1*.

Swap File Changes

For SunOS release 5 swap file information, see the *Solaris Transition Guide*.

For current information, see “Configuring Additional Swap Space (Tasks)” in *System Administration Guide, Volume 1*.

Unsupported SVR4 File System Types

See the *Solaris Transition Guide* for SVR4 file system types that are not supported.

Generic File System Commands

For current information on file system commands, see “Managing File Systems (Overview)” in *System Administration Guide, Volume 1*.

Directory and File Changes

This section describes the changes to directories and files between the SunOS release 4 and SunOS release 5.8.

/dev Directory

See “UFS File System Reference” in *System Administration Guide, Volume 1* which supersedes information in the *Solaris Transition Guide* on /dev directory structure.

/etc Directory

See *Solaris Transition Guide* for changes to the /etc directory and files, including the SunOS release 5 files /etc/vfstab and /etc/shadow.

See “Run Levels” in *System Administration Guide, Volume 1* for information on run control scripts such as rc0 that replace rc, rc.boot, rc.local, and rc.single in SunOS release 5.8.

See “UFS File System Reference” in *System Administration Guide, Volume 1* which supersedes information in the *Solaris Transition Guide* on /etc directory structure.

/sbin Directory

See “UFS File System Reference” in *System Administration Guide, Volume 1* which supersedes information in the *Solaris Transition Guide* on /sbin directory structure.

/usr Directory

See the *Solaris Transition Guide* for SunOS release 5 changes made to the /usr directory.

See “UFS File System Reference” in *System Administration Guide, Volume 1* which supersedes information in the *Solaris Transition Guide* on /usr directory structure.

/var Directory

See the *Solaris Transition Guide* for SunOS release 5 information on the /var directory structure.

In SunOS release 5.8, the /var/run directory has been added as a repository for temporary system files that are not needed across system reboots. The /tmp directory continues to be repository for non-system temporary files.

For current information on /var directory, see "Managing File Systems (Overview)" in *System Administration Guide, Volume 1*.

/kernel Directory

See the *Solaris Transition Guide* for SunOS release 5 changes to the /kernel directory .

See "UFS File System Reference" in *System Administration Guide, Volume 1* which supersedes information in the *Solaris Transition Guide* on /kernel directory structure.

/opt Directory

See the *Solaris Transition Guide* for SunOS release 5 changes to the /opt directory.

/sys Directory

See the *Solaris Transition Guide* for SunOS release 5 changes to the /sys directory.

Using File System Administration Commands

The following file system operations changed in SunOS release 5.7. See the *System Administration Guide, Volume 1* for current information on SunOS release 5.8 file system administration.

- Mounting file systems
- Monitoring file systems
- Sharing file systems

- Creating a new file system
- Checking a file system
- Backing up and restoring files

When you are ready to administer file systems on , see for detailed information and procedures.

Mounting File Systems and `autofs`

See the *Solaris Transition Guide* for SunOS release 5 changes on mounting file systems.

See "Managing File Systems (Overview)" in *System Administration Guide, Volume 1* for current information.

See "Mounting and Unmounting File Systems (Tasks)" in *System Administration Guide, Volume 1* for current procedures.

Monitoring File Systems

See *Solaris Transition Guide* for SunOS release 5 changes to the information on monitoring file systems.

See "Managing Disk Use (Tasks)" in *System Administration Guide, Volume 2* for current information.

Sharing File Systems

See the *Solaris Transition Guide* for SunOS release 5 changes to the information on exported (shared) file systems.

See "Remote File System Administration" in *System Administration Guide, Volume 3* for current information.

Creating New File Systems

See the *Solaris Transition Guide* for SunOS release 5 changes to the information related to the `mkfs`(1M) command.

See "UFS File System Reference" in *System Administration Guide, Volume 1* for current information on the `newfs`(1M) and `mkfs`(1M) commands.

Checking File Systems

See the *Solaris Transition Guide* for SunOS release 5 changes to the information related to the `fsck`(1M) command.

See “Checking File System Integrity” in *System Administration Guide, Volume 1* for current information on the `fsck`(1M) command.

Backing Up and Restoring Files

See the *Solaris Transition Guide* for SunOS release 5 changes to the information related to `backup` and `restore` commands.

See “Backing Up and Restoring Data Topics” in *System Administration Guide, Volume 1* for references to information on backing up and restoring data and for current information on the commands:`usfsdump`, `usfsrestore`, `dd`, `tar`, and `cpio`.

UFS Logging

See “Managing File Systems (Overview)” in *System Administration Guide, Volume 1* for current information on UFS logging.

CHAPTER **10**

Setting Up a Solaris 8 Server to Support SunOS Release 4.x Diskless Clients

See the section called “Setting Up a Solaris 7 Server to Support SunOS Release 4 Diskless Clients” in *Solaris Transition Guide* for information on adding SunOS release 4 support to a SunOS release 5 server. The section tells you how to use `discover4x`, `install4x`, and `convert4x` programs available in the `SUNWhinst` package.

Note - For Solaris 8 release, the `SUNWhinst` package is available on the Solstice™ AdminSuite™ 2.3/Solstice™ AutoClient™ 2.1 CD.

CHAPTER 11

Managing Printers, Terminals, and Modems

This chapter updates information in the *Solaris Transition Guide* on changes to print, terminal, modem and SAF administration.

The chapter contains:

What's New in the Solaris 8 Operating Environment

Solaris Print Manager is a Java™-based graphical user interface that enables you to manage local and remote printer access. This tool can be used in the following name service environments: NIS, NIS+, NIS+ with Federated Naming Service (`xfn`), and files. You must be logged in as superuser to use this tool.

Solaris Printer Manager is the preferred method for managing printer access rather than Admintool. Solaris Print Manager centralizes printer information in a name service environment.

Adding printer information to a name service makes access to printers available to all systems on the network and generally makes printer administration easier because all the information about printers is centralized.

In this release, you can manage printer configuration information in the NIS+ name service without the underlying `xfn` application layer with Solaris Printer Manager. This provides better performance when accessing printer configuration information.

Printing

This section provides updated references to documentation on printer set up and administration.

Summary of Printing Differences

See the *Solaris Transition Guide* for information on the SunOS release 5.7 LP print service commands that replaced the SunOS release 4 `lpd` daemon and the `lpr`, `lpq`, `lprm`, and `lpc` commands.

The Solaris 8 printing software provides an environment for setting up and managing client access to printers on a network. The Solaris printing software contains these components:

- Solaris Print Manager, a graphic user interface, provides the ability to make printers available to print clients via a name service.
- Admintool, a graphical user interface, manages printing on a local system.
- The LP print service commands, a command line interface used to set up and manage printers that also provides functionality above and beyond the other print management tools. Even if you do use Solaris Print Manager to set up printing, you will have to use some of the LP commands to completely manage printing in the Solaris environment. See "Administering Printers (Tasks)" in *System Administration Guide, Volume 2* for more information.

Print Commands and the Compatibility Package

See the *Solaris Transition Guide* for information using the SunOS/BSD Source Compatibility Package to run SunOS release 4 print commands on a SunOS release 5 system.

For current information, see the *Source Compatibility Guide*.

See the *Solaris Transition Guide* for information on SunOS release 5 changes to printer administration and `troff` printing.

Serial Port Management

This section describes serial port management (which enables terminal and modem connections) through Admintool or the Service Access Facility (SAF).

System Administration Guide, Volume 2 describes current setup and installation procedures for serial devices.

Terminal and Modem Management

For current information on setting up and modifying serial port software on terminals and modems, see "Managing Terminals and Modems (Overview)" in *System Administration Guide, Volume 2*.

Service Access Facility (SAF)

For current information, see "Managing Terminals and Modems (Overview)" in *System Administration Guide, Volume 2*.

CHAPTER 12

Network Service Administration

This chapter updates information in the *Solaris Transition Guide* on TCP/IP, NFS changes, PPP, and UUCP.

The chapter contains:

What's New in the Solaris 8 Operating Environment

NFS server logging and the new 8.9.3 version of `sendmail` have been added to SunOS release 5.8.

NFS Server Logging

NFS server logging allows an NFS server to provide a record of file operations performed on its file systems. The record includes information to keep track of what is accessed, when it is accessed and who accessed it. The location of the logs that

contain this information can be specified through a set of configuration options. These options also can be used to select the operations that should be logged. This feature is particularly useful for sites that make anonymous FTP archives available to NFS and WebNFS™ clients.

For instructions on how to enable NFS server logging, see "Automatic File-System Sharing" in *System Administration Guide, Volume 3*

`sendmail`, Version 8.9.3

Version 8.9.3 of `sendmail` includes the following changes:

- A new configuration file option, called `MaxHeadersLength`, limits the length of the sum of all header lines in a given message. The default value is 32768 bytes. Incoming messages with headers that exceed this value are rejected.
- A new file called `/etc/default/sendmail` can be used to store options to start sendmail with, rather than adding these options to the init script. The file makes it easier to upgrade systems, since the init scripts do not need to change.
- The `mail.local` program has been extended to use the Local Mail Transfer Protocol. The protocol allows error codes to be returned for each recipient, so that the message is resent to just the recipients that did not receive the message rather than having to re-queue the message to all of the recipients. This protocol was added to sendmail in the Solaris 7 release.
- A new command, named `/usr/bin/praliases`, can be used to turn the data in the alias database into plain text. If an argument is included on the command line, the command prints out a key:value pair, if the argument matches a key.
- A new program called `smrsh` can be used to limit the number of commands that can be run using the "|program" syntax of sendmail. Only programs included in `/var/adm/sm.bin` can be run if this feature is enabled. Adding `FEATURE('smrsh')` in the main configuration file enables this feature (see `/usr/lib/mail/README` for details.)
- New options have been added to the vacation `program: -f` can be used to select an alternate database instead of `~/.vacation.ext`; `-m` can be used to select an alternate message file instead of `~/.vacation.msg`; and `-s` can be used to specify the reply address instead of the UNIX From line in the incoming message.
- A change to the `mailx` program, allows for the From: header to be used as the basis of the sender instead of the envelope sender. This change makes `mailx` work like `mailtool` and `dtmail`.

For further information, see "What's New for the Solaris 8 Release?" in *System Administration Guide, Volume 3*.

Changes to TCP/IP

See “Overview of TCP/IP” in *System Administration Guide, Volume 3* for current information on TCP/IP.

Changes to NFS

See “Accessing Remote File Systems Reference” in *System Administration Guide, Volume 3* for information on:

- `share` `shareall`, and `/etc/dfs/dfstab` which replace `exportfs` and `/etc/exports`.
- `lockd`, and `mountd` which replace SunOS release 4 daemons `rpc.statd`, `rpc.lockd`, and `rpc.mountd`.
- a modified version of `nfsd` which no longer spawns multiple copies to handle concurrent requests. Checking the process table with `ps` shows only one copy of the daemon running.

PPP

See “Overview of Solaris PPP” in *System Administration Guide, Volume 3* for current information on PPP.

LDAP

See “FNS and Global Naming Systems” in *Solaris Naming Administration Guide* for current information on LDAP (Lightweight Directory Access Protocol).

IIIMP

See the *Solaris Transition Guide*.

UUCP

See the *Solaris Transition Guide* for a description of UUCP (UNIX-to-UNIX Copy) related to HoneyDanBer UUCP available with SunOS release 4 systems.

See "Overview of UUCP" in *System Administration Guide, Volume 3* for current information.

CHAPTER 13

Using Name Services

This chapter updates information in the *Solaris Transition Guide* on NIS, NIS+ and DNS name services.

The chapter contains:

What's New in the Solaris 8 Operating Environment

Features added for Solaris 8 release include:

- Native LDAP Native Lightweight Directory Access Protocol (LDAP) that provides the Naming Service switch back-end support for LDAP based directory service. See "SunOS release 4 and NIS-Compatibility Mode" on page 64.
- Support for domain name system (DNS) in system identification utilities. See "DNS" on page 65.

Name Service Switch

See “The Name Service Switch” in *Solaris Naming Administration Guide* for current information.

SunOS release 4 and NIS-Compatibility Mode

NIS+ can be used on SunOS release 4 or SunOS release 5 workstations running NIS. In other words, machines within an NIS+ domain can have their `nsswitch.conf` files set to `nis`rather than `nisplus`. To access NIS+ service on machines running NIS, you must run the NIS+ servers in *NIS-compatibility mode*.

NIS-compatibility mode enables an NIS+ server running Solaris operating environment to answer requests from NIS clients while continuing to answer requests from NIS+ clients. NIS+ does this by providing two service interfaces. One responds to NIS+ client requests, while the other responds to NIS client requests.

This mode does not require any additional setup or changes to NIS clients. In fact, NIS clients are not even aware that the server that is responding isn’t an NIS server–except that an NIS+ server running in NIS-compatibility mode does not support the `ypupdate` and `ypxfr` protocols and thus it cannot be used as a replica or master NIS server. For more information on NIS-compatibility mode, see the *NIS+ Transition Guide*.

Two additional differences are:

- The instructions for setting up a server in NIS-compatibility mode differ slightly from those used to set up a standard NIS+ server. For details, see *Solaris Naming Setup and Configuration Guide*.
- NIS-compatibility mode has security implications for tables in the NIS+ namespace. The NIS client software does not have the capability to provide the credentials that NIS+ servers expect from NIS+ clients. Consequently, NIS client requests are classified as unauthenticated. To enable NIS client access, NIS+ tables must provide access rights to unauthenticated requests. To understand more about the authentication process and NIS-compatibility mode, see “Security Overview” in *Solaris Naming Administration Guide*.

NIS+

See “Introduction to NIS+” in *Solaris Naming Administration Guide* for current information on NIS+ which has significant advantages over NIS in the areas of security, performance, scalability, and administration.

NIS and NIS+ Comparison

See “Differences Between NIS and NIS+” in *Solaris Naming Administration Guide*

Planning an NIS+ Upgrade

See *NIS+ Transition Guide*.

DNS

Domain name system (DNS) has been added to the list of name services that can be configured through the system identification utilities. See “Introduction to DNS” in *Solaris Naming Administration Guide* for current information on DNS.

CHAPTER 14

Solaris Common Desktop Environment

See the following docmentation for current information on the Solaris Common Desktop Environment (CDE):

- *Solaris Common Desktop Environment: Advanced User's and System Administrator's Guide*
- *Solaris Common Desktop Environment: User's Guide*
- "Common Desktop Environment Desktop Enhancements" in *What's New in the Solaris 8 Operating Environment*

PART II Transition Information for Developers

Use this part of the update to find current information for developers on transitioning from SunOS release 4 to a SunOS release 5.8 programming environment.

CHAPTER 15

Compilers, Linkers, and Debuggers

This chapter updates information in the *Solaris Transition Guide* on compilers, linkers, and debuggers.

The chapter contains:

What's New in the Solaris 8 Operating Environment

Features added for this release include:

- Extensions to run time link auditing. For more information, see "Linkers" on page 72.
- Secure path name change from `/usr/lib` to `/usr/lib/secure`. For more information, see "Linkers" on page 72.
- `$ISALIST` token support. For more information, see "Linkers" on page 72.
- `coreadm` command, core file management and debugging. For more information, see "Debuggers" on page 73.
- `apptrace` utility, a new application debugging tool. For more information, see "Debuggers" on page 73.

Compilers

See the *Solaris Transition Guide* for previous compiler related changes.

Visit `http://www.sun.com` to find current information on Sun Workshop™ and Sun Visual Workshop™ compiler products.

Linkers

See the *Solaris Transition Guide* for previous information on the link-editor and executable and linking format (ELF).

New linker related features added to the Solaris 8 operating environment are:

- Extensions to run time link auditing—additional means of invoking run time link auditing libraries is provided by the link editor options –`p` and –`P`. Additional run time link auditing interfaces `la_activity( )` and `la_objsearch( )` have been added. For more information, see the *Linker and Libraries Guide*.
- Secure path name change from `/usr/lib` to `/usr/lib/secure`—secure directory from which files can be pre-loaded is now `/usr/lib/secure` for 32-bit objects and `/usr/lib/secure/sparcv9` for 64-bit SPARCV9 objects. For more information, see the *Linker and Libraries Guide*.
- `$ISALIST` token support—greater flexibility in establishing instruction set specific dependencies is provided with the new `$ISALIST` dynamic string token. For more information, see the *Linker and Libraries Guide*.

Link Editor Option Differences

See the *Solaris Transition Guide* for a comparison of SunOS release 4 and SunOS release 5.7 `ld` options.

See “Link-Editor” in *Linker and Libraries Guide* for current information on the link-editor.

Building Shared Libraries

See the *Solaris Transition Guide* or information on previous changes to shared libraries.

See the section on building shared libraries in the “Link-Editor Quick Reference” in *Linker and Libraries Guide* for current information.

Building Executables

See the *Solaris Transition Guide* for information on creating dynamic and static executables. Examples compare the behavior of SunOS release 4 `–Bdynamic` and `–Bstatic` options with SunOS release 5`–dy` and `–dn` options in building executables.

See the section on building shared libraries in the “Link-Editor Quick Reference” in *Linker and Libraries Guide* for current information.

See the *Solaris Transition Guide* information on SunOS release 5.7 library search path changes and version numbering.

Debuggers

The Solaris 8 Operating Environment introduces:

- The `coreadm` command that provides flexible core file naming conventions and better core file retention. You can use the `coreadm` command, for example, to configure a system in which all process core files are placed in a single directory. Core files in a specific directory can then be examined whenever a Solaris process or daemon terminates abnormally. See the man page `coreadm`(1M).
- The `apptrace` utility that enables application and system level debugging by tracing calls directly from an executable object to the shared libraries it depends upon. Call-tracing enabled by `apptrace` is more reliable than the previously available `sotruss` command. See the man page `apptrace`(1).

See the “Troubleshooting Solaris Software Topics” in *System Administration Guide, Volume 2* for current information on debugging.

CHAPTER 16

Tools and Resources

This chapter updates information in the *Solaris Transition Guide* on changes to tools and resources for the development environment.

`ioctl()` Requests

The section replaces information on `ioctl`'s in the *Solaris Transition Guide*.

All `ioctl`'s related to `filio`, `sockio`, `streamio`, `termio`, `termios`, `mtio`, and `dkio`, as well as `ioctl`'s supported by the older version 7 and 4BSD terminal drivers are supported. Otherwise, only the `ioctl`'s pertaining to standard devices of Solaris 8 platforms are provided. Discrepancies between the `ioctl` numbers (for the `ioctl`'s supported) in the two versions are handled transparently. The `ioctl` parameters are mapped whenever necessary.

Table 16-1 shows SunOS release 4 `ioctl`'s that are not supported for use in the Solaris 8 operating environment:

TABLE 16–1 `ioctl`'s Not Supported in the Solaris 8 Operating Environment

ioctl( )	**Description**
DKIOCGCONF	/usr/lib/libcThis `ioctl` is not available in this release, but it is supported by the Binary Compatibility Package. This `ioctl` is replaced by `DKIOCINFO`, which now includes the combined information of the SunOS release 4 `DKIOCGCONF` and `DKIOCINFO` structures.
DKIOCGLOG	This `ioctl` is not supported in Solaris 8. With the Binary Compatibility Package, it returns `EINVAL`.
DKIOCWCHK	In SunOS release 4 this `ioctl` toggles the write check on the floppy device. With the Binary Compatibility Package, this `ioctl` does not toggle the write check on the floppy device, but it returns success.
DKIOCSCMD	This `ioctl` is available only for the `xd`(7), `xy`(7), and `ipi`(7) drives. This `ioctl` will fail for SCSI devices. Use the USCSI `ioctl` for these devices.
_O_TIOCCONS	This ioctl is obsolete and is not supported by the Solaris 8 release or this package.
O_TIOCGSIZE	This `ioctl` is obsolete and is not supported by the Solaris 8 release or this package.
TIOCMODG	This `ioctl` is obsolete and is not supported by the Solaris 8 release or this package.
TIOCMODS	This `ioctl` is obsolete and is not supported by the Solaris 8 release of this package.

`ptrace( )` Request Values

See the *Solaris Transition Guide* for information on changes to `ptrace( )` request values and symbolic constants for SunOS release 5.

See the *Binary Compatibility Guide* for current information.

Libraries

See the *Solaris Transition Guide* for information on libraries and dynamically allocated resources in SunOS release 5.

Using `make`

See the *Solaris Transition Guide* for information on new `make` utilities available in SunOS release 5 environment.

Using SCCS

See the *Solaris Transition Guide* for information on differences in the SunOS release 5 source code control system (SCCS).

Determining Application Compatibility

See the *Solaris Transition Guide* for information on using the Binary Compatibility Package.

Packaging Applications

See the *Solaris Transition Guide* for information on application packaging.

Packaging Utilities

See the *Solaris Transition Guide* for information on packaging utilities.

Toolkits

See the *Solaris Transition Guide* for information OPEN LOOK™ Intrinsics ToolKit (OLIT) and XView™.

Finding SunOS Release 4.x Tools

See the *Solaris Transition Guide* for information on where to find SunOS release 4 and SunOS release 5 programming tools.

CHAPTER 17

Networking and Internationalization

This chapter updates *Solaris Transition Guide* information on networking features related to the programming environment. It also discusses issues concerning the improved internationalization features.

What's New in the Solaris 8 Operating Environment

Native LDAP Native Lightweight Directory Access Protocol (LDAP) provides the Naming Service switch back-end support for LDAP based directory service. For more information, see "The Name Service Switch" in *Solaris Naming Administration Guide*.

Domain name system (DNS) has been added to the list of name services that can be configured through the system identification utilities. For more information, see "DNS" on page 65.

The Solaris 8 operating environment provides support for over 90 locales, a new, intuitive interface for installing languages, expanded Unicode support, and improved data interoperability utilities. See "Internationalization" on page 81.

Networking

The Solaris 8 operating environment continues to provide networking features discussed in the following sections in addition to offering support for LDAP and DNS.

See *NIS+ Transition Guide* and *NFS Administration Guide* for more information.

NIS, NIS+

The Solaris 8 operating environment supports the network information service (NIS), the SunOS release 4 name service, and the network information services plus (NIS+), an enterprise-naming service of heterogeneous distributed systems.

See "Introduction to NIS+" in *Solaris Naming Administration Guide* for current information on NIS+.

See "Differences Between NIS and NIS+" in *Solaris Naming Administration Guide* or a comparison information on NIS and NIS+.

`nsswitch.conf` File

See "The Name Service Switch" in *Solaris Naming Administration Guide* for current information.

Network Interface Tap

See the *Solaris Transition Guide* for background information on network interface tap (NIT), no longer required in SunOS release 5.

See the *STREAMS Programming Guide* for current information on STREAMS drivers that can be opened and communicated with directly.

Sockets

The section replaces information on sockets in the *Solaris Transition Guide*.

The Binary Compatibility Package enables you to run SunOS release 4 dynamically-linked socket applications on SunOS release 5.8 systems. In order do so:

- You must explicitly specify the socket library (`–lsocket` or `–libsocket`) on the compilation line.
- You may need to link with `libnsl` also (use `–lsocket –lnsl`, not `–lnsl –lsocket`).
- You must recompile all SunOS release 4 socket-based applications with the socket library to run under SunOS release 5.8.

Internationalization

See the *Solaris Transition Guide* for changes to internationalization made between SunOS release 4 and SunOS release 5.7.

For current and complete information on Solaris 8 internationalization support, see *International Language Environments Guide*.

Character Support

The SunOS release 4 software supported single-byte representation of non-ASCII characters. The Solaris 8 operating environment supports:

- Multibyte Support Environment (MSI) programming model that enables multibyte characters (such as Chinese, Japanese, or Korean characters) to be read in as logical units and stored internally as wide characters. These wide characters cannot be stored in a single byte, but they can be processed by the program as logical entities in their own right. Finally, wide characters can be written out (undergoing appropriate translation) as logical units. The MSE allows programs to be written to handle multibyte characters using the same programming model that is used for single-byte characters.
- Code Set Independence (CSI) that removes EUC dependencies on specific codesets or encoding methods from Solaris OS libraries and commands. The CSI architecture allows the Solaris operating environment to support any UNIX file system safe encoding. CSI supports a number of new codesets, such as UTF-8, PC-Kanji, and Big-5.
- Extended Unicode support that adds new Unicode (UTF-8) locales for Simplified Chinese and Traditional Chinese. Proper rendering of bidirectional text and context-sensitive characters is fully supported for Complex Text Layout (CTL) scripts such as Arabic, Hebrew and Thai in the en_US.UTF-8 locale .

  For detailed information, see *International Language Environments Guide*.

Message Catalogs

See the *Solaris Transition Guide* for a brief summary on creating message catalogs.

For detailed information, see Solaris 8 internationalization support, see *International Language Environments Guide*.

Locale Database

The Solaris 8 operating environment provides support for over 90 locales.

For detailed information, see Solaris 8internationalization support, see *International Language Environments Guide*.

Commands

See the *Solaris Transition Guide* for information on changes to SunOS release 4 commands.

Libraries

See the *Solaris Transition Guide* for information on changes to internationalization libraries in SunOS release 5.

Solaris 8 CSI-enabled Libraries

Nearly all functions in Solaris 8 `libc` (`/usr/lib/libc.so`) are CSI-enabled. However, the following functions in `libc` are not CSI-enabled because they are EUC-dependent functions:

`csetcol( )` `csetlen( )` `euccol( )`

`euclen( )` `eucscol( )` `getwidth( )`

The following macros are not CSI-enabled because they are EUC dependent

`csetno( )` `wcsetno( )` `euccol( )`

In the Solaris 8 product, `libgen` (`/usr/ccs/lib/libgen.a`) are internationalized, but not CSI enabled.

In the Solaris 8 product, `libcurses` (`/usr/ccs/lib/libcurses.a`) are internationalized, but not CSI enabled.

Here are the five deliverables:

- The utility (32-bit application): `/usr/bin/geniconvtbl`

- 32-bit and 64-bit special `iconv` shared objects:

  `/usr/lib/iconv/geniconvtbl.so`
  `/usr/lib/iconv/sparcv9/geniconvtbl.so`

- Sample `geniconvtbl`(1) input source files and system-provided binary table files for both 32-bit and 64-bit Solaris platforms:
  `/usr/lib/iconv/geniconvtbl/srcs/`

  ISO8859-1_to_ISO646.txt
  ISO646_to_ISO8859-1.txt
  ISO8859-1_to_UTF-8.txt
  UTF-8_to_ISO8859-1.txt
  ShiftJIS_to_eucJP.txt
  eucJP_to_ShiftJIS.txt
  `/usr/lib/iconv/geniconvtbl/binarytables/`
  ISO8859-1%ISO646.bt
  ISO646%ISO8859-1.bt

- Changed `iconv_open`(3) at 32-bit and 64-bit libc.so.1s:

  `/usr/lib/libc.so.1`
  `/usr/lib/sparcv9/libc.so.1` (sparcv9 example)

- Man pages:

  `/usr/share/man/sman1/geniconvtbl.1`
  `/usr/share/man/sman4/geniconvtbl.4`

CHAPTER 18

System and Device Configuration

This chapter updates information in the *Solaris Transition Guide* on changes in the Solaris operating environment that affect kernel and system developers.

The chapter contains:

What's New in the Solaris 8 Operating Environment

The `devfsadm` command provides an improved mechanism for managing special device files. For more information, see "Device Naming From a Developer's Perspective" on page 86.

System Configuration

SunOS release 5 changes related to system configuration include the dynamically loaded kernel and kernel layout, the `config` and `boot` commands, and the `/etc/system` file.

Dynamically Loaded Kernel

See the *Solaris Transition Guide* for information on the dynamically-loaded kernel and changes to `modunload`(1M) and `modunload`(1M) commands.

See “Loading and Unloading Drivers” in *Writing Device Drivers* for current information on using `modunload`(1M) and `modunload`(1M) commands.

Kernel Layout

For current information, see“SunOS Kernel and Device Tree” in *Writing Device Drivers*

Reconfiguration Boot

See the *Solaris Transition Guide* for information on the SunOS release 5 reconfiguration boot.

Note - The reconfiguration `boot –r` command, described in the *Solaris Transition Guide*, does not currently remove file system entries for devices that are physically removed from the system. For more information, see `boot`(1M).

Device Naming From a Developer’s Perspective

This section supersedes “Device Naming From a Developer’s Perspective” in *Solaris Transition Guide*. It focuses on the SunOS 5.8 `devfsadm` command that provides an

improved mechanism for managing special device files in the `/dev` and `/devices` directories, including support for dynamic reconfiguration events.

In earlier SunOS 5 releases, device configuration was handled by `drvconfig`, which managed the physical device entries in the `/devices` directory, and five link generators, devlinks, disks, tapes, ports, and audlinks, which managed the logical device entries in the `/dev` directory. For compatibility purposes, `drvconfig` and the other link generators are symbolic links to the `devfsadm` utility.

Both reconfiguration boot processing and updating the `/dev` and `/device` directories in response to dynamic reconfiguration events are handled by `devfsadmd`, the daemon version of the `devfsadm` command. This daemon is started from the `/etc/rc*` scripts when a system is booted.

Since `devfsadmd`, the `devfsadm` daemon, automatically detects device configuration changes generated by any reconfiguration event, there is no need to run this command interactively.

For more information, see “What’s New in Disk Management?” in *System Administration Guide, Volume 1*.

CHAPTER 19

Device Drivers and STREAMS

This chapter updates *Solaris Transition Guide* information on device drivers and STREAMS.

Device Drivers and STREAMS Device Drivers

See the *Solaris Transition Guide* for information on SunOS release 5 device driver interfaces, the `devinfo` command, porting considerations, and Solaris driver architecture.

STREAMS

Some areas of change for STREAMS modules are transparent I/O controls, new message types, and the `autopush`(1M) facility that automatically pushes a list (`/etc/iu.ap`) of modules on a stream. For current information on these features, see sections on the following topics in the *STREAMS Programming Guide*:

- Module and Driver `ioctl`
- Kernel-Level Messages
- `autopush`

Transparent `ioctl()`s

See the *Solaris Transition Guide* for information on SunOS release 4 `ioctl ()` requests.

See the *STREAMS Programming Guide* for current information.

See "`ioctl()` Requests" on page 75 of this update for related information.

`autopush` Command

See the *Solaris Transition Guide* for information on SunOS release 5 `autopush()` command.

See *STREAMS Programming Guide* for current information about pushing STREAMS modules.

Device Driver Commands

See the *Solaris Transition Guide* for information on SunOS release 5 device driver commands.

Glossary

Architecture — The specific components of a computer system and the way they interact with one another. From a SunOS release 5.8 kernel perspective, “architecture” refers to the type of CPU chip in the system. In this manual, the only architecture discussed is the kernel architecture.

Binary Compatibility Package — An optional package that enables existing SunOS release 4 applications, both statically and dynamically linked, to run under SunOS release 5.8 without modification or recompilation.

Client — A system that uses NIS, NFS, or other services provided by another system.

Cluster — A functional collection of software packages.

Configuration cluster — A default selection of clusters representing typical software selections.

Dataless — A system whose `/usr` and `/usr/kvm` file systems are provided by a file server, and whose root and swap disk partitions are on a directly connected disk.

DDI — Device Driver Interface. Facilitates both source and binary portability across successive releases of the operating system on a particular system.

DKI — Driver Kernel Interface. A defined service interface for the entry point routines and utility functions specified for communication between the driver and the kernel. It does not encompass the driver/hardware or the driver/boot software interface.

Disk partition — See *disk slice*.

Disk slice	A discrete portion of a disk, configured during installation. Slices were referred to as partitions in SunOS 4.1 releases and System V Release 3.
Diskless	A system whose `root`, `swap`, and `/usr` file systems (disk partitions) are provided by an NFS server (or file server) instead of a directly connected disk.
DNS	Domain name system. The distributed name/address mechanism used in the Internet.
ELF	Executable and linking format. The native object format of SunOS release 5.8 executables.
Heterogeneous server	A server of diskless clients that is a mix of its own architecture and other kernel architectures.
Homogeneous server	A server of diskless clients that has only clients with the same kernel architecture.
Install server	A machine that provides boot service and network access to the SunOS release 5.8 distribution. This can be on either a local CD-ROM or a file system containing a copy of the distribution.
IP address	A unique number that identifies each host in a network. The address is partitioned into two distinct parts: a network part and a host part.
Kernel architecture	The hardware portion of a SunOS release 5.8 kernel. Two systems have the same kernel architecture if the same SunOS release 5.8 kernel runs on both of them. Not all Sun-4 systems have the same kernel architecture.
Multiple OS operation	The operation that enables a SPARC server to continue serving SunOS 4.1 clients while the server is running the SunOS release 5.8 release. In this special case, a heterogeneous server could be serving clients of the same kernel architecture.
Netmask	A number used by software to separate additional network information (called the “subnet”) from the host part of an IP address. The netmask is also referred to as the subnet mask.
NIS	The network information service. NIS provides information about machines and services in a local area network.

NIS+	An enhanced version of the network information service software. These enhancements include secure updates, better performance, and hierarchical naming.
OLIT	Abbreviation for OPEN LOOK Intrinsics Toolkit.
Package	A functional grouping of software. AllSunOS release 5.8 software is grouped and distributed in packages. Packages are also the standard way to deliver unbundled Sun and third-party software.
SAF	Services Access Facility. A tool for managing access to local and network system services, such as modems and terminals
SAC	Service Access Control. Commands used to set up and manage services.
Server	A system that provides services to the network. These services include NFS system and NIS database access.
Source Compatibility Package	An optional package that contains a collection of SunOS release 4 and BSD commands, library routines, and header files otherwise not available with SunOS release 5.8 software.
Standalone	A system that does not depend on a server for its `root`, `swap`, or `/usr` disk partitions.
Time zone	Any of the 24 longitudinal divisions of the earth's surface for which a standard time is kept.
Unbundled	Software products not delivered as part of SunOS release 5.8 software distribution.

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