



Simplified Chinese Solaris System Administrator's Guide

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Preface

Simplified Chinese Solaris System Administrator's Guide provides system administration information specific to Simplified Chinese Solaris™ operation in the Common Desktop Environment (CDE). This guide also includes some additional information that advanced users and developers can use to access and control the features of the Simplified Chinese Solaris operating environment.

Who Should Use This Book

You should read this guide if:

- You need specific instructions on how to set up features for users.
- You are a system administrator who has not used the Simplified Chinese Solaris operating environment.
- You are a developer who needs information on accessing and controlling the Simplified Chinese features of the Simplified Chinese Solaris operating environment.
- You are an advanced user who wants to use or customize the Simplified Chinese Solaris operating environment.
- You want information on a variety of details internal to the operation of the Simplified Chinese Solaris operating environment.

You should already be familiar with Sun's standard product documentation and the documentation of the window system that you are using. This guide adds only Simplified Chinese features.

Before You Read This Book

Before you read this book, please review the product overview and any last-minute changes that arrived too late to be included in this document:

- *Simplified Chinese Solaris Release Overview*

Make sure to install your system properly as described in the document appropriate to your hardware platform:

- *Solaris 9 Installation Guide*

Each chapter of this manual addresses a different aspect of administration of the Simplified Chinese Solaris operating environment. Some chapters give step-by-step instructions for using or customizing product features.

Chapter 1 introduces the Simplified Chinese Solaris operating environment, including CDE and the locales included in the product.

Chapter 2 describes advanced ways to use Simplified Chinese window system features.

Chapter 3 describes the set up for printers that can print Simplified Chinese output and the use of PostScript™ printers.

Chapter 4 covers setting terminals to use the proper protocols for the input and display of Simplified Chinese characters.

Related Books

The following books are related to the topic of this book and may prove helpful for further reading.

For information on how to use the window system and associated applications:

- *Solaris Advanced User's Guide*

For information about how to develop applications for this Simplified Chinese Solaris release:

- *International Language Environments Guide*

What Typographic Changes 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 <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name% You have mail.</code>
AaBbCc123	What you type, contrasted with on-screen computer output	<code>machine_name% su</code> Password:
<i>AaBbCc123</i>	Command-line placeholder: replace with a real name or value	To delete a file, type <code>rm filename</code> .
<i>AaBbCc123</i>	Book titles, new words or terms, or words to be emphasized	Read Chapter 6 in <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> 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	<code>machine_name%</code>
C shell superuser prompt	<code>machine_name#</code>
Bourne shell and Korn shell prompt	<code>\$</code>
Bourne shell and Korn shell superuser prompt	<code>#</code>

Starting the Simplified Chinese Solaris Software

The Simplified Chinese Solaris operating environment must be specially set up for using Simplified Chinese text facilities. This chapter describes the steps required to set up an environment for running the Simplified Chinese Solaris operating environment.

The Simplified Chinese Solaris operating environment provides the Common Desktop Environment (CDE) window environment. CDE is a fully internationalized environment. The Simplified Chinese Solaris product includes the following locales:

- `C`—ASCII English environment.
- `zh`—Simplified Chinese environment in extended UNIX code (EUC).
- `zh.GBK`—Simplified Chinese environment in GBK, an extension of GB2312-80 (that is Guo Biao Kuo in Chinese PinYin, which supports all CJK characters that are in Unicode 2.0).
- `zh_CN.GB18030`—Simplified Chinese environment in GB18030-2000 (The new GB 18030-2000 standard, which will obsolete the GBK, supports CJK Unified Ideographs Extension A and Yi, Mongolian, Tibetan and Uigur minority scripts in Unicode 3.0).
- `zh_CN.EUC`—Symbolic link to `zh` locale.
- `zh_CN.GBK`—Symbolic link to `zh.GBK` locale.
- `zh.UTF-8`—Simplified Chinese environment in Unicode 3.1.
- `zh_CN.UTF-8`—Symbolic link to `zh.UTF-8`.

Applications Defaults Files

The Simplified Chinese CDE includes the following directories for applications defaults, including one for system-wide defaults and two specific to locale features:

- The `/usr/dt/app-defaults/C` directory stores system wide application defaults. These values are for the C locale.
- The `/usr/dt/app-defaults/zh` directory stores application defaults that are specific to that locale.
- The `/usr/dt/app-defaults/zh.GBK` directory stores application defaults that are specific to that locale.
- The `/usr/dt/app-defaults/zh.UTF-8` directory stores application defaults that are specific to that locale.
- The `/usr/dt/app-defaults/zh_CN.GB18030` directory stores application defaults that are specific to that locale.

System Environment

Users can change their locale settings with shell environment variables. Each category names an existing locale. The `setlocale()` function directly sets or queries the setting of these categories. Internationalized functions use these settings to access the appropriate tables for the desired locale.

Environment variables can indirectly set the categories: when `setlocale()` sets the categories to the default setting for that site, it uses the setting of each environment variable to set the associated categories. The `setlocale()` function does not change the settings of environment variables, it only reads their settings.

Changing the Default Locale

You can change the default locale system-wide with the following procedure.

1. **Edit the `/etc/default/init` file by adding or changing the line.**

Substitute `C`, `zh`, `zh.GBK`, `zh_CN.GB18030` or `zh.UTF-8` for *locale*.

```
LANG=locale
```

2. **Have all users exit CDE.**
3. **Type the following commands:**

```
% su
# /usr/dt/bin/dtconfig -kill
```

4. **Type the following commands:**

```
% su
# reboot
```

Locale and Category Terminology

The terms locale and category relate to each other as follows:

- A *locale* includes specification of a language, territory, code set, and other features. The Simplified Chinese Solaris operating environment includes the following locales:
 - `C`—For the ASCII English environment, the locale must be set to `C`.
 - `zh`—For the Simplified Chinese environment in EUC, the locale must be set to `zh`.
 - `zh.GBK`—For the Simplified Chinese environment in GBK, the locale must be set to `zh.GBK`.
 - `zh.UTF-8`—For the Simplified Chinese environment in Unicode, the locale must be set to `zh.UTF-8`.
 - `zh_CN.GB18030`—For the Simplified Chinese environment in GB18030-2000, the locale must be set to `zh_CN.GB18030`.
- A *category* is a set of features that comprise a locale. For example, character displays or time/date representations, whose behavior depends on the *locale*. Simplified Chinese Solaris categories include the following:
 - `LC_CTYPE` sets the character-type for classification and conversion.
 - `LC_TIME` sets the locale for representation of date and time.
 - `LC_NUMERIC` sets the number representation locale (used also for I/O).
 - `LC_MONETARY` sets the currency representation locale.
 - `LC_MESSAGES` sets the language locale for messages to users.
 - `LC_COLLATE` sets the locale-dependent collation of strings.

The environmental variable `LC_ALL` explicitly sets the same locale for all categories; it has the highest priority. If categories or `LC_ALL` are not set, the `LANG` environmental variable will determine the category setting.

Interfacing With the Simplified Chinese Solaris Localization Facility

At the C shell level, each environment variable can be set to *locale* (`C` for ASCII, `zh` for Simplified Chinese in EUC, `zh.GBK` for Simplified Chinese in GBK, `zh_CN.GB18030` for Simplified Chinese in GB18030-2000, or `zh.UTF-8` for Simplified Chinese in Unicode) by a shell command as follows:

- **C shell users can enter a shell command as follows:**

```
system% setenv LC_TIME locale
```

- **Bourne shell (sh) users can use set or export:**

```
$ set -a LC_TIME$ LC_TIME=locale
```

or

```
$ LC_TIME=locale
```

```
$ export LC_TIME
```

Making zh or zh.GBK, zh_CN.GB18030, or zh.UTF-8 the *locale* allows the user's environment to display time in Simplified Chinese format and text. A user can define a mix of locales for the working environment. For example, characters can be typed and converted in Simplified Chinese, time can be displayed in French format, and messages can appear in English.

Many users work in a single cultural environment. The LC_ALL and LANG environment variables set the system default for all categories. For example, these C shell commands set the system default for all categories to *locale*.

```
system% setenv LC_All locale
```

```
system% setenv LANG locale
```

System administrators or users can set the default and the `setenv` syntax can be used in programming.

This setting is put into effect the next time a `setlocale()` function call in an application program line sets a category to the default setting:

```
setlocale(LC_XXX "")
```


Setting Up Simplified Chinese Solaris Printing Facilities

The Simplified Chinese Solaris operating environment supports printing Simplified Chinese output through the following types of printing facilities:

- Line printer containing built-in Simplified Chinese fonts
- PostScript-based printer containing built-in scalable fonts
- Any PostScript-based printer for bitmap printing

The system administrator installs printer(s) as described in the printer product documentation. Then users can print Simplified Chinese text using procedures described in this chapter.

Follow the printer documentation for physically connecting the printer. Then use the following instructions.

Line Printer Support

For the Simplified Chinese Solaris operating environment to run a line printer, the printer must recognize EUC.

Simplified Chinese Solaris Code Filters

A printer that does not support EUC needs filters that convert EUC files for printing. For example, the following command sequence tells LP, the print service, that printer `lp1` accepts only GB format files. This command line also installs printer `lp1` on port `ttya`. The `lpadmin(1)` man page explains this command more fully.

```
# lpadmin -p lp1 -v /dev/ttya -I GB
# accept lp1
# enable lp1
```

An `lpfilter` command line like the following can be used in the process of printing files whose format is not supported by the printer:

```
# lpfilter -f filter-name -F pathname
```

The above command tells LP that a converter called *filter-name* (for example `euctogb`) is available through the filter description file named *pathname*. The content of *pathname* can be as follows:

```
Input types: simple
Output types: GB
Command: euctogb
```

The above filter takes default type file input and converts it to GB format by using `euctogb`.

To print an EUC file, use the command in the following example:

```
system% lp EUC-filename
```

To print a GB format file, use the following command:

```
system% lp -T GB GB-filename
```

Laser Printer Support

To print Simplified Chinese characters using a PostScript-based printer, a Simplified Chinese Solaris software application must have either the Simplified Chinese Solaris `xetops`, `xutops` or `mp` utilities.

Using the `xetops` and `xutops` Utility

The `xetops` and `xutops` utilities produce bitmapped graphics as printable images. Simplified Chinese software includes the `xetops` and `xutops` utilities so any system can print Simplified Chinese text on a PostScript printer. The `xetops` utility in both EUC and GBK locales and `xutops` utility in UTF-8 locale may no longer be supported in the future.

- `xetops` handles files in the `zh` and `zh.GBK` locales
- `xutops` handles files in `zh.UTF-8` locale

Using `xetops` and `xutops` is described in *Simplified Chinese Solaris User's Guide*, in the chapter "Simplified Chinese Printing Facilities," and in the `xetops(1)` and `xutops(1)` man pages.

A typical command line for printing a file named *filename* containing Simplified Chinese characters with or without ASCII/English characters, would be as follows:


```
system% pr filename | xetops | lp
```

The syntax for `xutops` is similar:

```
system% pr filename | xutops | lp
```

Make *filename* the name of the file to print. This file can contain ASCII/English characters as well as Simplified Chinese.

Using the `mp` Utility

The `mp` utility supports all Asian locales including UTF-8 locales. As a print filter, `mp` generates a pretified version of contents in PostScript format. The Postscript output file contains glyph images from Solaris system-resident scalable or bitmap fonts, depending on each locale's system font configuration for `mp`.

A typical command line for printing a file named *filename* containing Simplified Chinese characters with or without ASCII/English characters, would be as follows:

```
system% mp filename | lp -d printer
```

Make *filename* the name of the file to print. This file can contain ASCII/English characters as well as Simplified Chinese.

TTY Environment and Support

This chapter assumes you are familiar with:

- How the Solaris operating environment communicates with external devices using STREAMS and `ioctl`.
- How different terminal types are supported by `termcap` and `terminfo`.

Refer to the `termio(7)` man pages for background information on STREAMS and TTY drivers.

Terminal Support

The Simplified Chinese Solaris operating environment supports Chinese terminals (EUC-GB). The terminals should have built-in Simplified Chinese fonts and input methods.

Installing a Terminal

If you have not added a terminal to your system before, first try installing a terminal in ASCII mode only. For more information, see *System Administration Guide*.

Serial Port Interface for Adding Terminals

Serial Ports is available from the Admintool menu to configure serial ports for terminals. Serial Ports provides the easiest method of installing a terminal. Serial Ports is invoked by `admintool`. For more information on `admintool`, see *System Administration Guide*.

▼ Accessing Serial Ports

1. **Become superuser.**

```
system% su
```

2. **Type `admintool`.**

The admintool menu will appear.

```
system# admintool
```

3. **Select the Serial Ports icon.**

▼ Using Serial Ports Menus

A Chinese terminal is installed as you would install an ASCII terminal.

1. **Select Edit on the Serial Ports menu.**

Serial Ports: Modify Service submenu appears.

2. On Admintool: Modify Service submenu select Enabled, Baud Rate 9600, and enter the terminal type.

细节: 基本 较多 深入

波特率: 9600

终端类型: vt200

重置 取消

Using the Command Line Interface to Add Terminals

The following procedure is required to set up a terminal on ttya port via the command line:

1. **Determine the port monitor version number.**
The port monitor version number will display.

```
# ttyadm -v
```
2. **Enter the following commands, substituting the port monitor version number for *ver*.**
(For more information on `sacadm` (1M) and `pmadm` (1M), see their man pages.)

```
# pmadm -r -p zsmon -s ttya
# sacadm -a -p zsmon -t ttymon -c /usr/lib/saf/ttymon -v ver
```
3. **Use the `pmadm` command that matches your terminal type to add a login service:**
For EUC terminals, use the following command:

```
# pmadm -a -p zsmon -s ttya -i root -fu -v ver -m ``ttyadm -S y \
-T terminal_type -d /dev/ttya -l 9600 -m ldterm,ttcompat -s \
/usr/bin/login``
```
4. **Turn on the terminal.**
Follow the documentation that accompanies the terminal.
5. **Log in the terminal.**

6. Check the correctness of the installation:

```
# setenv LANG locale
# /bin/stty cs8 -istrip defeucw
```

Note – These values show that the operating system is set to communicate with the terminal in “8-bit no-parity” mode. Make sure the terminal is set up in “8-bit no-parity” mode. Refer to the terminal’s setup manual for the proper way to set terminal options.

Setting a User’s TTY

To verify that your TTY is properly set up:

1. Type the `/bin/stty` command with the `-a` option:

```
system% /bin/stty -a
```

2. If the values from above (`cs8, -istrip`) are not listed, then use the following command to set them:

```
system% /bin/stty cs8 -istrip defeucw
```

This is the last step in setting up a terminal.

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