

Multilocale Installation Guide

Solaris™ 2.6 Operating Environment



THE NETWORK IS THE COMPUTER™

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Multilocale Installation Guide for the Solaris 2.6 Operating Environment

Introduction

This document provides step-by-step instructions on installing multiple locales and languages onto a system running the Solaris™ 2.6 operating environment. Having multiple locales installed within a single system will allow you to view and edit documents created using different codesets.

As relationships between customers, suppliers, and even offices within a company span more countries, cultures, and languages, it becomes more and more important for computer operating environments such as Solaris to support this mix. Customers need to make use of the most up-to-date information to run their businesses, whether this information is in Chinese, French, English, etc. Solaris 2.6 is uniquely capable of supporting this mix of languages and cultures.

This document assumes that you have access to localized versions of the Solaris operating environment, and are familiar with the following terms and concepts:

- GUI-based Solaris installation process
- Difference between writing systems, languages, and locales
- Definition of single-byte and multibyte writing systems

Business Scenario

In this section we describe a possible scenario where a multilocale Solaris system may be requested.

A company has many regional/local subsidiaries, each of which uses a database to track information related to their local market considerations (Figure 1). This information is also fed back to a main database managed through company headquarters for tracking and analysis at a corporate level.

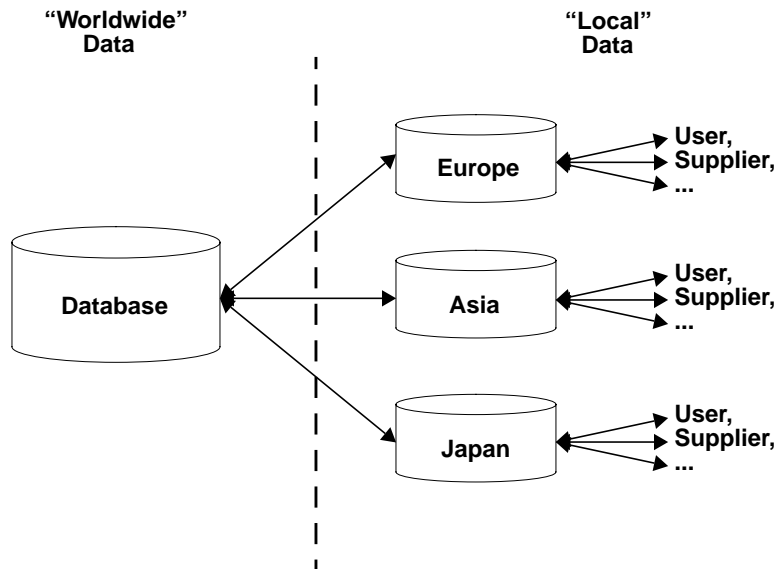


FIGURE 1 Multiple databases are used to track and analyze information.

Two types of language environments are involved in this type of scenario. The first can be called the "native-language" environment, and requires that the system support native language input/output and data. In the example in Figure 1, the database used in Japan might be thought of as a native-language environment if it is running Japanese and is used to process Japanese language data sent between the regional office and their suppliers, distributors, and so forth. The second language environment, "multilingual" for the purposes of this document, requires that the system be able to handle multiple languages, and at the same time allow users with different language and cultural backgrounds to easily manipulate the information stored in the computer.

Using the example in Figure 1, the corporate database may need to support distribution of localized applications and/or interfaces to regional offices in Europe, Asia, and Japan. In addition, it must be able to store and allow users to manipulate data received from each of the regional offices without loss of data context (i.e. be able to handle data encoded in each region's native language).

Supporting this mix of languages and cultures often exposes language issues in an operating system that may not have been apparent in the past. Solaris addresses these issues with an internationalization framework that makes it easy to support both native-language and multilingual environments. Native-language environments are supported through the availability of localized Solaris operating environments and products, while support for multilingual environments is handled via a multilocale Solaris system, where multiple locales are installed within a single system. For example, a multilocale Solaris system may be used in situations where a user requests an English-interface Solaris and the capability to view and edit Japanese and Korean text simultaneously.

Often when using a non-multilingual system, users may experience some or all of the following issues:

- Data displayed using “garbage” characters
- User unable to edit the data
- User must reboot each time they switch languages

The Solaris operating environment is unique in that by providing the framework to support a multilocale system, these issues are easily resolved. By simply ensuring that the locale associated with the original document is installed properly, users only need to activate the applicable locale to view or edit native-language documents. Viewing and editing documents encoded using different codesets is simply an instance of switching to (i.e. activating) a locale that supports the codeset used within the document — without the need for rebooting the system.

The next section will lead you through the following steps so that you can easily create a multi-locale system:

1. System Requirements
2. Installing Additional Locales
3. Useful Commands
4. Viewing and Editing Documents Created with Different Codesets

Multilocale Solaris

System Requirements

- Purchase associated localized media kits for the locale that you are interested in installing.

Note – Contact your local sales representative for ordering information. Table 1 contains a list of the locales supported in each localized version of the Solaris operating environment. For multibyte locales, the localized fonts and language-input functions are only available as part of the localized operating environment.

Installation Instructions

Before you install a media kit, make sure you understand the difference between the *install language*, the *system default locale*, the *login locale*, and the *active locale*. These terms are defined as follows:

- **Install Language** – The language that will be displayed to you during the installation process. This may be different from the language associated with the locales you select for installation.

For example, if you prefer English and want to install the Korean locale, you would need to set your install language to English, and at the appropriate time in the installation process, select the Korean locale to install.

- **System Default Locale** – The default locale to which you will boot into after any reboot of your system. This is usually set to the locale associated with the install language.

The system default locale is stored in the file `/etc/default/init`

- **Login Locale** – The language associated with this locale controls the language used to display the system user interface for window messages, window titles, icon names, and menus for a particular login session. To see these items in another language, you must log out and then log back into the system in a different language. After you log into the system, the login locale becomes the active locale.

- **Active Locale** – If you have many different locales installed within one system, the active locale is the locale that is active in the currently active window. You can change the active locale by typing some commands in the terminal window (see Useful Commands section).

For example, if you are working in locale `Test_Locale` and then reboot the system, it will boot using the system default locale, not the last active locale used (`Test_Locale`).

1. Install the base system using the *initial* option.

Note – For this document, the term *base system* refers to your initial install system.

Note – In a GUI installation, there are two different language-selection windows. The first window sets the display language during the installation process, while the second sets the locales (and associated languages) to be installed.

2. Install any additional locales using the *upgrade* option.

In this step, you are installing on top of the base system you installed in Step 1. In an *upgrade* install, only the packages that are different from those already found in your system will be installed. For example, if you start with an English Solaris and *upgrade* install the Japanese system, only the Japanese-specific packages will be installed.

Note – If you are installing more than one multibyte locale, including Japanese, then Japanese must be installed last.

a. Set the install language if it is different from the locale being installed.

If you do not understand the language associated with the additional locale(s) you want to install, select English in the first language selection window. This sets the language displayed during the install to English.

b. Install additional locale(s).

Select the additional locales to install in the second language selection window.

3. Reboot the computer.

All installed locales should be in one system image.

4. Complete the installation.

Login to the system as `root` and perform the following steps.

a. Update the login locale if needed.

If the install language is different from the language of the locale(s) that were installed, you must update the system default locale so that the next time you reboot, the system will boot into the language associated with the specified locale.

i. Open the file `/etc/default/init`

ii. Replace any `LC_*` **variables with** `LANG=<locale_name>`

b. Remove duplicate BCP (Binary Compatibility Package) packages.

Follow this step only if you have installed the Japanese locale in addition to one or more of the following locales:

- zh (Simplified Chinese)
- zh_TW (Traditional Chinese)
- ko (Korean)

If you installed any additional multibyte locales, Japanese should have been the last install. The Japanese locale relies on the Japanese BCP packages `SUNWjbcpl`, `SUNWjwbcpl` being available in the system. Thus you must delete all other BCP packages to ensure no conflicts affect input method function.

<u>If additionally installed</u>	<u>Use pkgrm to delete</u>
ko	<code>SUNWkbcpl</code> , <code>SUNWkwbcpl</code>
zh	<code>SUNWcbcpl</code> , <code>SUNWcwbcpl</code>
zh_TW	<code>SUNWhbcpl</code> , <code>SUNWhwbcpl</code>

Note – There are conflicts in the way that the BCP is supported in the multibyte locales. Note that this issue conflict is only related to applications written for SunOS™ 4.x. If the application is written for Solaris 2.5.1/2.6 and does not need to be compatible with 4.x, then users should not have any problem.

5. Reboot the computer.

The installation is now complete.

Useful Commands

- Setting the login locale

The initial language displayed during login will be the language associated with the system default locale set during installation. To switch the login locale, execute the following menu selection at CDE dtlogin:

```
Option -> Language -> <locale_name>
```

- To see a list of available (installed) locales:

```
% locale -a
```

will return a list of all installed locales.

- To see the current locale:

```
% locale
```

will return the current LANG and LC_ALL settings.

- Switching between locales.

The format of the command to switch between installed locales is:

```
% setenv LANG <locale_name>  
% setenv LC_ALL <locale_name>
```

These commands only temporarily changes the active locale and do not set the locale as the default login locale.

Note – All processes launched in an active locale will inherit the features of that locale. For example: If the active locale uses a date format of d/m/y, then subsequent processes (such as launching an application) will display all date formats using d/m/y.

- Setting the font path for a locale.

The format of the command to set the font path for an installed locale is:

```
% xset fp+ /usr/openwin/lib/locale/<locale_name>/X11/fonts/75dpi
```

When viewing documents created with another locale, you will need to set the font path accordingly to ensure that the characters are displayed correctly.

- Setting up an htt server for multibyte locales.

The format of the command to set up the htt server for an installed Asian locale is:

```
% /usr/openwin/bin/htt -lc_basiclocale <locale_name>
```

The htt server must be activated to enable the input method(s) associated with multibyte locales.

Viewing and Editing Documents Created with Different Character Sets

In this section we describe a common scenario where a user must view and/or edit documents which may have been created using different codesets. Step-by-step instructions show how easy it is for users to switch between different locales — without rebooting — to take advantage of a particular locale's features as needed.

Suppose you receive one document from a colleague in China and one from your colleague in Korea. These documents contain the names of potential local suppliers which you want to compare against a master supplier list. You need to display both the Simplified Chinese document and the Korean document before you can compare them against the master list.

To do this, follow these steps:

1. Login to the locale you want to use.

For example, if you are most comfortable with English, you may want to log in using the `C` or `en_US` locale.

2. Ensure the zh (Simplified Chinese) and ko (Korean) locales are installed.

- Type:

```
% locale -a
```

and verify `zh` and `ko` appear in the resultant list.

3. Activate the zh locale by typing the following commands in a terminal window.

- To set the language and locale to Simplified Chinese, type:

```
% setenv LANG zh
% setenv LC_ALL zh
```

- To set the font path for Simplified Chinese, type:

```
% xset fp+ /usr/openwin/lib/locale/zh/X11/fonts/75dpi
```

- To set the htt server for Simplified Chinese, type:

```
% /usr/openwin/bin/htt -lc_basicalocale zh
```

4. Start the application used to create the Simplified Chinese document.

- Open another terminal window and set the language and locale to Simplified Chinese by typing:

```
% setenv LANG zh
% setenv LC_ALL zh
```

- Start the application used to create the document. For example, if the application were called App_One, type:

```
% App_One
```

At this point you can view and edit the Simplified Chinese text in the document opened by App_One. Another example may be to use `/usr/dt/bin/dtterm` to display the localized text.

5. Switch to the Korean locale to view the Korean document.

Note that you will not have to reboot the system. Instead, simply open another terminal window and type the same commands as for the Simplified Chinese example, but using the Korean locale information.

- Type the following, noting the ko differences from the zh information you entered for Simplified Chinese.:

```
% setenv LANG ko
% setenv LC_ALL ko
% xset fp+ /usr/openwin/lib/locale/ko/X11/fonts/75dpi
% /usr/openwin/bin/htt -lc_basicalocale ko
```

6. Start the application used to create the Korean document.

For example, if the application were called App_Two, type:

```
% setenv LANG ko
% setenv LC_ALL ko
% App_Two
```

At this point, you can view and edit the Korean text in the document opened by App_Two.

Note – When switching between App_One and App_Two, any input methods associated with the applications' active locale will also switch accordingly, but you will not be able to enter both Simplified Chinese and Korean text in the same document.

Note – Some applications may require that you set additional command-line options such as `-lc_inputlang`, `-lc_displang`, etc. Please check the application documentation for more information.

Q&A

1. What does “localized version of Solaris” mean?

The term refers to a version of the Solaris operating environment that has been adapted to meet local market needs. An example of an adaptation may be translating the interface to the local language, or setting the default date format to the one most commonly used in the target local market.

The following versions of Solaris 2.6 are available: English, French, German, Italian, Swedish, Spanish, Simplified Chinese, Traditional Chinese, Korean, and Japanese.

2. What is a locale?

A locale is a collection of files, data, and sometimes code, that contains the information needed to adapt Solaris to local market needs. A locale can be thought of as a “bundle” containing information such as the messages displayed to the user, the interface/GUI components (for example, the size of the buttons), cultural information such as date and currency formats, and fonts or other writing system-specific information. For example, Sun offers Japanese Solaris 2.6. This fully localized version of the Solaris operating environment contains the Japanese locale (denoted `ja_JP.PCK`) which contains items such as translated interface messages, Japanese fonts, and Japanese date formats (Y/M/D as opposed to M/D/Y).

3. What is the difference between a full locale and a partial locale?

Solaris distinguishes between full locales and a partial locales in the software. Generally, partial locales can be thought of as containing the cultural data (and possibly code) for a target market, but not the translated messages. Note in some cases a partial locale may include some translated interface messages, but not all of them.

An example of a full locale is the `ja_JP.PCK` locale in the Japanese version of Solaris. The locale contains all the translated messages and all the cultural data and market-specific features and can be considered one bundle.

An example of a partial locale would be the `de_CH.8559-1` SwissGerman locale, which contains only the cultural data for the SwissGerman region of Switzerland but does not contain any translated messages. Therefore, if a user decides to run the SwissGerman locale, the interface would be in the original language, but items affected by the cultural data, such as the date format, will change to the SwissGerman version.

4. *Can a single language have multiple locales?*

Yes. One way to think about this is that the world can be divided by language, country, and regions, where each is a subset of the preceding. For example, French is a language spoken in many countries around the world: France, Switzerland, and Canada. Each country may have regional differences specific to that country. The Solaris operating environment captures these regional differences in a locale. Thus for the French language, Solaris provides locales for French, Canadian-French, and SwissFrench. These are all related to the French language, but contain distinct regional differences based on the region where the French language is spoken. In addition to a language having multiple locales, a country may also have multiple locales. For example, in Switzerland, there are regions which are predominately SwissGerman, another which is predominately SwissFrench, and another SwissItalian. Each of these regions has specific cultural differences which Solaris captures in the associated locale, yet they are all related to the country Switzerland.

Solaris 2.6 Locale Support

The following table shows the Solaris 2.6 locales and the level of localization for each locale.

TABLE 1 Solaris 2.6 Locales

Locale Name	Localized Solaris Version					
	Base	European ¹	S-Chinese	T-Chinese	Japanese	Korean
C (English)	F ¹	F	F	F	F	F
en_US.UTF-8 (English)	F	F	F	F	F	F
en_* (English)	P ²	P	P	P	P	P
es_* (Spanish)	P	F	P	P	P	P
fr_* (French)	P	F	P	P	P	P
de_* (German)	P	F	P	P	P	P
it (Italian)	P	F	P	P	P	P
sv (Swedish)	P	F	P	P	P	P
zh (Chinese-PRC)	- ³	-	F	-	-	-
zh_TW (Chinese-Taiwan)	-	-	-	F	-	-
zh_TW.BIG5 (Chinese-Taiwan)	-	-	-	F	-	-
ja (Japanese)	-	-	-	-	F	-
ja_JP.PCK (Japanese)	-	-	-	-	F	-
ko (Korean)	-	-	-	-	-	F
ko_KO.UTF-8 (Korean)	-	-	-	-	-	F
da (Danish)	P	P	P	P	P	P
nl_* (Dutch)	P	P	P	P	P	P
su (Finnish)	P	P	P	P	P	P
no (Norwegian)	P	P	P	P	P	P
pt_* (Portuguese)	P	P	P	P	P	P
et (Estonian)	P	P	P	P	P	P
cz (Czech)	P	P	P	P	P	P
hu (Hungarian)	P	P	P	P	P	P

TABLE 1 Solaris 2.6 Locales (*Continued*)

Locale Name	Localized Solaris Version					
	Base	European ⁴	S-Chinese	T-Chinese	Japanese	Korean
po (Polish)	P	P	P	P	P	P
ru (Russian)	P	P	P	P	P	P
el (Greek)	P	P	P	P	P	P
tr (Turkish)	P	P	P	P	P	P
lv (Latvian)	P	P	P	P	P	P
lt (Lithuanian)	P	P	P	P	P	P

1. F: Full locale – Locale with translated messages.
2. P: Partial locale – Locale without translated messages.
3. -: Not available.
4. European: French, German, Italian, Spanish, or Swedish.



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