



OpenSolaris Style Guide

Not For Publication

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Preface

The *OpenSolaris Style Guide* provides guidelines for a consistent approach to writing technical documentation. This guide can help reduce the time that you spend to ensure consistency in your manuals.

About the *OpenSolaris Style Guide*

This style guide is for developers, writers, editors, illustrators, production specialists, and others who are involved in the publication of various types of documentation.

This style guide is an evolving document. Considerable effort has been made to ensure that this style guide conforms to the editorial standards that it contains. If you have suggestions for additions or improvements, submit them as explained in [“Reporting Errors and Requesting Changes”](#) on page 17. All comments will be considered for inclusion in later editions of this style guide.

Reporting Errors and Requesting Changes

You can report errors and request changes by email or by using the docs-discuss alias.

Reporting Errors and Requesting Changes by Email

To report errors and request changes by email, write to docs-discuss@opensolaris.org.

Acknowledgments

Several people contributed to the preparation and review of this guide:
Diane Plampin, . Members of the Sun Editorial Forum also provided content.

Constructing Text

This chapter provides information about the use of text and graphical elements, such as section headings, tables, and cross-references. Readers will easily recognize and understand the formats as long as you use the style guidelines consistently throughout your document.

This chapter discusses the following topics:

- “Headings” on page 19
- “Lists” on page 22
- “Tables” on page 29
- “Code Examples” on page 33
- “Man Page References” on page 35
- “Error Messages” on page 36
- “Cross-References” on page 37
- “Notes, Cautions, and Tips” on page 39

Headings

Headings describe the material that follows them. The appropriate placement of a document heading depends on the content and flow of information. For example, several pages of material might fit well in the context of a single first-level heading, while a few sentences might require a fourth-level heading. Use first-level headings for the broadest summaries, and become more specific as you progress to fourth-level headings. Do not go beyond fourth-level headings. If you have additional topics to cover beyond fourth-level headings, restructure the text. Try to have at least two headings at each level.

For more information about writing headings for online documents, see [“Write Meaningful Headings and Subheadings” on page 81](#). For more information about writing procedure headings, see [“Use Procedure Headings Appropriately” on page 114](#).

Writing Section Headings

Section headings group topics in a chapter and provide points of reference for a reader. Headings are hierarchical. You must carefully build headings and text in a logical and understandable progression.

When writing headings, follow these guidelines:

- Avoid ambiguous headings such as “Overview.”
- Make sure that the heading summarizes the specific information that is discussed in a section.

Incorrect: Introduction

Correct: Sun Fire V880 Features

Incorrect: Front Panel

Correct: Front Panel Features

- Reflect the reader’s perspective rather than your own.

Incorrect: Authentication

Correct: Administering System Authentication Options

- Keep headings short but as meaningful as possible.

Concise headings are easier to scan in text and in the table of contents.

Incorrect: ChorusOS 4.0 Supported Features

Correct: ChorusOS 4.0 Features

- Place the most important words first.

Incorrect: Elements of Netra High Availability

Correct: Netra High Availability Features

- Try to use parallel construction when writing headings at the same level.

If a heading level includes gerunds (for example, “Opening,” “Installing”), try to write all other headings in the chapter at that same level using gerunds.

Incorrect:

Restoring the Operating System, Disaster Recovery With Autochanger,
Recovery With a Stand-alone Drive

Correct:

Operating System Disaster Recovery, Autochanger Disaster Recovery,
Stand-alone Drive Disaster Recovery

- Repeat the subject in the first sentence of the paragraph following a heading, rather than using a pronoun to represent the subject.

<Head2>Remote Digital Loopback Test

Incorrect: This tests the system’s ability to...

Correct: The remote digital loopback test examines the system’s ability to...

<Head2>cd

Incorrect: Use this to change directories.

Correct: Use the `cd` command to change directories.

- Avoid starting headings with an article.
- Do not include abbreviations or acronyms or their expansions in parentheses in headings.
- Do not repeat the exact text of higher-level headings in subheadings, or the text of chapter titles in section headings.
- Include some text before the initial first-level heading in a chapter.
- Some documentation groups add qualifiers to chapter titles and section headings to identify the type of information that is contained within them, such as overviews, tasks, and reference material.

If you use qualifiers, do so consistently within the documentation set.

Booting a System (Overview)

Shutting Down a System (Tasks)

Using Fonts in Headings

The font conventions that you use for text in a heading are the same as the conventions that you use for the text in a paragraph. For punctuation and spaces, use the default font. See [Broken Link \(Target ID: SGCONSTR-19691\)](#) for typographic conventions.

Capitalizing and Punctuating Headings

Follow American English punctuation and capitalization guidelines for headings. Follow these guidelines:

- Use no punctuation at the end of a heading except for a question mark or quotation mark when needed.
- Capitalize the first letter of the first word and the first letter of all other words *except* conjunctions, articles, prepositions of fewer than four letters, and the “to” in infinitives.

Numbering Section Headings

Unnumbered headings are generally used in documents that are designed for end users. *Numbered headings* are reserved for hardware installation manuals, technical references, and service manuals.

Numbered section headings use a digit for each heading level. The numbers start with the chapter number. The digits are separated by a period.

The section number 4.2.3.1 tells readers that the text is in Chapter 4, the second first-level heading, the third second-level heading, and the first third-level heading. These sections are numbered in this way:

- 4.2
 - 4.2.1
 - 4.2.2
 - 4.2.3
 - 4.2.3.1
 - 4.2.3.2

Lists

Lists are used to break out information from the paragraph format and to structure the information into an easier-to-read format. Lists must include at least two items. Be sure that lists are unmistakably lists. You do not want the reader to confuse a list with steps, which denote actions. Use secondary entries only if you cannot avoid them. Complex entries defeat the easy-to-read format of a list.

Use *unnumbered (bulleted) lists* when the entries are not dependent on the sequence in which you present them. When the entries are dependent on sequence, use *numbered lists* with numerals and letters to build the hierarchy.

Use running text when you have up to four one-word items that have equal weight and no order. Incorporate the items in a sentence in which the items are separated with serial commas. You can also put the items in a list if you want to call particular attention to the items.

Use lists in the following situations:

- When you have a list of five or more items
- When you have a list of two or more items in which any of the items consists of two or more words
- When you have a list of two or more items in which any of the items is a link

This section covers the following topics:

- “List Introduction Guidelines” on page 23
- “List Introductions and Verbs” on page 24
- “Capitalizing and Punctuating Lists” on page 25
- “Writing Bulleted Lists” on page 26
- “Writing Numbered Lists” on page 27
- “Writing Jump Lists” on page 28

List Introduction Guidelines

This section provides guidelines for constructing list introductions.

- Introduce a list with one of the following constructions:
 - A complete sentence
 - A paragraph
 - A sentence fragment or noun phrase
A sentence fragment contains a verb, for example, “Use File Manager:”
A noun phrase does not contain a verb, for example, “Functions:”
- Do not insert a list between the beginning and the end of a sentence.

Incorrect:

The calculator can be used for the following operations:

- Addition
- Multiplication
- Subtraction
- Division

and has a large, easy-to-read display.

Correct:

The calculator has a large, easy-to-read display and can be used for the following operations:

- Addition
- Subtraction
- Multiplication
- Division

- When introducing a list, do not construct the list items so that they complete a sentence.

List items should be grammatically complete.

Incorrect:

Use App Builder if you:

- Are not an expert Motif programmer
- Are not familiar with desktop services
- Want to build your application interface quickly

Correct:

Use App Builder in the following situations:

- If you are not familiar with desktop services
- If you are not an expert Motif programmer
- When you want to build your application interface quickly

- Do not end an introductory phrase with a preposition.

Incorrect:

Entities are useful for:

- Referencing a common string of text
- Using the same text among different authors
- Preventing entry errors

Correct:

Entities are useful in the following situations:

- Referencing a common string of text
- Using the same text among different authors
- Preventing entry errors

- When introducing a list, use a colon if the introduction clearly anticipates the list, especially if the introduction contains phrasing such as “the following” or “as follows.”

If the introduction is complete in itself, use a period.

For example, you could use either of these statements to introduce the same list:

Send a mail message in any of the following three ways:

The system provides three convenient ways to send a mail message.

- When you use a complete sentence or a phrase with a colon to introduce an unnumbered list, be sure that the syntax of the items in the list is parallel and agrees with the syntax of the introduction.

Incorrect:

You can use Mail Tool to:

- Compose a new message
- Replied to a message sent to you
- Forwarding a message to another person

Correct:

You can use Mail Tool to perform the following tasks:

- Compose a new message
- Reply to a message that was sent to you
- Forward a message to another person

List Introductions and Verbs

Avoid ending list introductions with a verb. Ending the introduction to a list with a verb usually causes problems for translators and nonnative English speakers.

- Do not end an introductory phrase with the word “to” as part of infinitives in the list.

Incorrect:

This section explains how to:

- Prevent unauthorized users from gaining system access
- Protect shared servers
- Create user names and passwords

Correct:

This section explains the following tasks:

- Preventing unauthorized users from gaining system access
- Protecting shared servers
- Creating user names and passwords

- Do not end an introductory phrase with a modal verb.

Modal verbs include “can,” “could,” “may,” “might,” “must,” “should,” “will,” and “would.”

Incorrect:

To do complete print integration, your application must:

- Provide a print action
- Use all the environment variables for desktop printing

Correct:

Your application must meet the following requirements to do complete print integration:

- Provide a print action
- Use all the environment variables for desktop printing

- An introductory phrase can end with an imperative verb.

In the login screen, type:

- Your system name
- Your user name
- Your password

Capitalizing and Punctuating Lists

For consistency, follow these guidelines when you construct the items in lists:

- Capitalize the first word of each entry in all lists.
- Use punctuation at the end of each item in a list of complete sentences.
- Use no punctuation at the end of each item in a list of sentence fragments.

Avoid mixing complete sentences and sentence fragments in the same list. If you must have a mixed list, add periods at the end of every list item.

To make the list items parallel, a sentence in a mixed list might be preceded by a fragment that describes or introduces the sentence. The fragment ends with a period. The following examples illustrate this recommendation.

Incorrect:

- Fragment
- Fragment
- This item is a complete sentence.
- Fragment

Better:

- Fragment.
- Fragment.
- This item is a complete sentence.
- Fragment.

Best:

- Fragment.
- Fragment.
- Fragment. This item is a complete sentence.
- Fragment.

Writing Bulleted Lists

This section provides guidelines for bulleted (unnumbered) lists when the sequence of the entries is not important.

- Make sure that the items in a bulleted list are similar in value.

Incorrect:

The workstation that you purchased comes with the following hardware:

- System unit
- Monitor
- Keyboard and mouse
- Maybe a CD-ROM drive
- Maybe a modem

The last two entries in the example are not similar to the first three entries because they are options, not standard equipment.

Correct:

The workstation that you purchased comes with the following hardware:

- System unit
- Monitor
- Keyboard and mouse

After setting up your workstation, you can add several options, such as a CD-ROM drive or a modem.

- Use an introductory phrase for each entry, when needed.

Lists sometimes begin with a summary word or phrase, followed by an explanation. Present the summary word or phrase in bold. The text that follows the summary word or phrase is in the same font as the document's body text. Use a period after the summary word or phrase if the items in the list end with periods. Use an en dash surrounded by spaces after the summary word or phrase if the items in the list do not end with periods. This style is often referred to as a *bold lead-in*. This structure works well when you have explanatory text for each entry.

Select one of the following Find options:

- **Change** – Changes the first instance and proceeds to the next instance
- **Change All** – Changes all instances
- **Skip** – Skips this instance and proceeds to the next instance

The workstation that you purchased comes with the following hardware:

- **System unit.** This unit houses the main components of the computer.
- **Monitor.** This monitor is a 19-inch color monitor.
- **Keyboard and mouse.** These input devices are part of the computer package. Different colored covers for the mouse device are included.

Writing Numbered Lists

Use numbered lists when the order of the entries is important. However, exercise caution. Many readers are impatient to complete tasks and could mistake numbered lists for procedures. Follow these guidelines:

- Write the text for numbered lists in a style that differs from the style of instructional steps in a procedure.

Do not assume that a reader will notice any format differences between numbered lists and numbered steps.

- Avoid using verbs in the imperative form.

Using an imperative verb could lead a reader to believe that the numbered lists are procedures. Use gerunds or participles instead.

Incorrect:

To create a file with the `vi` editor, you need to perform the following basic operations:

1. Start `vi`.
2. Add text to the file.
3. Write the file to save its contents.
4. Quit `vi`.

To avoid possible misinterpretation, introduce the list clearly and do not use imperative verbs.

Correct:

Creating a file with the `vi` editor involves the following basic operations:

1. Starting `vi`
2. Adding text to the file
3. Writing the file to save its contents
4. Quitting `vi`

Writing Jump Lists

A *jump list* is a bulleted list of cross-references that serves as a kind of table of contents for a portion of a book, usually a chapter. Jump lists are useful navigational tools for a reader. These lists also provide you with a good test of the integrity of your document structure. If your document is online and hypertext is available, include links to the selected sections.

Note – If your document is going to be presented in a specific online display, check whether jump lists are generated automatically as part of the navigational system.

When constructing jump lists, follow these guidelines:

- Try to keep the text of a jump list short enough to fit on one page.
- Try to use jump lists consistently in your document.
If you use a jump list at the beginning of one chapter, try to begin every chapter with a jump list.
- List headings for topics that might be of particular interest to a reader.
You do not need to include only first-level headings, but be consistent throughout a book.
- For jump lists at the start of a chapter, place all text before the jump list whenever possible.

A cross-reference to another book or chapter that covers related information not found in the list of information covered in the current chapter might be placed after the jump list. However, because readers often use jump lists for online navigation, text should be placed before the jump list in most cases.

Tables

Tables are an ideal format for presenting statistical information or facts that you can structure uniformly. Information that is conceptual or explanatory is best written in a narrative paragraph.

Writing Text for Tables

Tables typically include a number, caption, column headings, and table text. Use spaces and rules (vertical and horizontal lines) to format the table text, when necessary.

Table Introductions

If you need to introduce the context of a table to your readers, follow these guidelines:

- Use a complete sentence when introducing a table, not a phrase ending in a colon.
- Refer to the table's position on the page in the document flow, for example, "The following table describes the compatible applications."
In subsequent references to the same table, use "preceding" or "following" as appropriate.
- Refer to the table number only if the table is not close to the introductory text.
- Do not insert a table between the beginning and end of a sentence.

Incorrect:

Add the following packages from your Solaris Software CD

Package Name	Description
SUNWjvrt	Java VM runtime environment
SUNWmfrun	Motif RunTime Kit
SUNWxwplt	X Window System platform software

and their related patches.

Correct:

Add the following packages and their related patches from your Solaris Software CD.

Package Name	Description
SUNWjvrt	Java VM runtime environment
SUNWmfrun	Motif RunTime Kit
SUNWxwplt	X Window System platform software

Table Captions

When you construct table captions, do the following:

- Use formal tables with numbers and captions except when the context of the tables is so clear that the numbers and captions are redundant.
- Capitalize table captions.
Match the table caption style to the figure captions and section headings in your document.
- Decide how you can indicate when table text runs onto more than one page in the printed document.
“Continued” usually appears in a caption on the second and subsequent pages. For longer tables, you might indicate how many pages the table runs and the current page in that sequence, for example, “Sheet 3 of 8.” Your authoring environment might insert this wording for you.

Table Column Headings

Table column headings concisely summarize information in a column. To create table column headings, follow these guidelines:

- Avoid starting a column heading with an article.
For example, write “Alternative Backup Schedule” rather than “An Alternative Backup Schedule.”
- Do not use end punctuation, except a question mark.
- Do not use sentence fragments.
- Capitalize column headings as you do section headings.
Capitalize the first letter of the first word and the first letter of all other words *except* conjunctions, articles, prepositions of fewer than four letters, and the “to” in infinitives.

Table Text

The table text is the main body of information, formatted into rows and columns. To construct table text, follow these guidelines:

- Use parallel construction, capitalization, and punctuation.

- For better readability, use an initial capital for only the first word in a table cell unless a reason exists to capitalize other words in the text.
- Use a period at the end of each entry in a column when one or more entries are complete sentences. Try to use either all phrases that do not require periods or all sentences that do require periods.
- Write table text as concisely as possible.
- You may use abbreviations or symbols in tables when you need to conserve space. Some common space savers include “no.” for “number” and “%” for percentages.
- Avoid bold in table text, but use the typographic conventions established for the document.
- For footnotes in a table, use numerals when possible.
When numerals might be confusing due to numbers in the table text, use these symbols in the following order:
 - Asterisk (*)
 - Section mark (§)

Determining the Type of Table to Use

Tables present information in concise categories. The way that you design a table depends on the information that you need to present. The following is an example of a standard table with columns and rows separated by spaces.

EXAMPLE 1-1 Standard Table

Specifier	Value of the Variable	Data Type for the Variable
ACCESS	'DIRECT SEQUENTIAL'	CHARACTER
BLANK	'NULL' 'ZERO'	CHARACTER
IOSTAT	Error number	INTEGER
OPENED	. TRUE . . FALSE .	LOGICAL

The following table uses horizontal lines to group information into rows.

EXAMPLE 1-2 Horizontal Lines Table

Name and Address	Corporate Office	Sales	Service
ABC Corp. 624 Main Street Chelmsford, MA 01824	+1-617-555-9731	+1-617-555-1632	+1-617-555-4932
DEF Corp. 90 Columbia Avenue Los Angeles, CA 940434	+1-213-555-8413	+1-415-555-5940	+1-415-555-3662
GHI Corp. Colorado Springs, CO 80920	+1-719-555-8842	+1-719-555-9013	+1-719-555-4701

The following table uses horizontal and vertical lines to separate information.

EXAMPLE 1-3 Horizontal and Vertical Lines Table

Command	Syntax	Options
at	at <i>time</i> at [<i>options</i>] <i>job-ids</i>	-l List current job -r Remove specified job <i>time</i> Specify the time when commands will run
chown	chown <i>owner filename</i>	-h Change ownership of symbolic link
find	find <i>filename</i>	-print Print names of files found -name <i>filename</i> Find file with cited name

The following table uses side and top headings to create a grid. Both the top and side headings are bold. A vertical line separates the side headings from the table text.

EXAMPLE 1-4 Side and Top Headings Table

Permission	User	Group	Others
Read	4	4	4
Write	2	0	0
Execute	1	1	1
Total	7	5	5

The following table uses a two-column format. You can use this format as an informal table without a number or a caption. Two-column tables are often used for command options and their descriptions. In some authoring environments, this format might be a list rather than a table.

EXAMPLE 1-5 Two-Column Table

- a List hidden files
- l Include date and size information in the file list
- r List the files in reverse alphabetical order

Code Examples

Code examples are portions of computer programs that you include in a document to help explain a topic. Code examples can include the dialogue between a user's input and the computer's responses. Examples can also include only the code that a person enters into the computer.

For information about legally protecting information in code examples, see [Broken Link \(Target ID: SGLEGAL-11\)](#).

Writing Code Examples

Because programming code is precise, you must reproduce the exact code, even if the code contains language errors in spelling, grammar, or punctuation. If you have the opportunity, bring the error to the attention of the person or group supplying the code so that the error can be corrected in the source.

To include a code example in a List of Code Examples in the front matter, add a caption. Capitalize and punctuate the caption as you would any other caption, title, or heading.

Guidelines for Boxing Code Examples

In some publications groups, you can use boxes to draw attention to code examples. The boxes separate selected information from the surrounding text.

The following guidelines describe what code to box and what code not to box. If you are able to box code examples, be consistent with this style.

What to Box

The following structures typically are enclosed in boxes:

- **Definitions** – Interfaces (function and command synopses), data structures, and class definitions
 - **Interfaces.** Function and command interface definitions as done in reference manual pages. Must identify return value type, name, and parameters.
 - **Data structures.** The encoding of a data structure in C or C++, or a vector or array in Fortran, with appropriate annotation by comments.
 - **Class definitions.** Combined structure and interface definitions, as included in C++ and FNS reference manual pages.
- **Window-to-terminal exchanges** – Any combination of screen prompts, user input, or program output
 - **User input.** Anything that a user types. Insert variable names as needed.
 - **Unformatted computer output.** Unformatted output, such as that produced by a program or command.
 - **Formatted program output.** Formatted output, such as that produced by a program or command.
- **Extracts from files** – Formatted output from programs that are stored in files, or formatted or organized ASCII text to be put into programs

What Not to Box

The following structures typically are not enclosed in boxes:

- **Code fragments.** One or more lines of code that are not captioned. Fragments can include ellipsis points and can be inserted into a paragraph or between paragraphs.
- **Program listings.** Source code of any programming language that is preceded by a caption. For example, in C or C++, the smallest unit of code in a listing is a complete function that compiles when combined with appropriate header files and global variable definitions.

Note – If you are presenting lengthy programs, put them in an appendix and cross-reference to them unless the entire book consists mainly of long code examples.

Man Page References

UNIX commands are documented in reference materials known as *man pages* or reference manual pages. For more information on man pages, see “Man Pages” on page 154. When referring to man pages in text, follow these guidelines:

- Include the reference manual section number next to a command or function name only when you think the reader might benefit from reviewing the man page in relation to the information in the text.

If doing so would be helpful to the reader, you can include the reference manual section number next to the first reference in a document to a command or function name.

- The first time you include a command in a procedure, cross-reference the command’s man page in the explanatory text following the step. If the command appears later in the same procedure or section, cross-reference the man page again only if doing so in that context helps readers.
- Do not include the reference manual section number next to the command or function name in the following situations:
 - In every mention of the command or function if it is referenced numerous times in a paragraph or series of paragraphs
 - Titles of sections
 - Table, figure, or example captions
- Use monospace font for the command or function name, and regular text font for the reference manual section number, which should appear in parentheses. Capitalize the letter in a man page section, for example, 1M.
- Make sure that instructions to the reader about how to access the man page are clear. This policy makes the man page reference clearer to the reader and benefits translation as well.

Incorrect: See `ioctl(2)`.

Correct: See the `ioctl(2)` man page.

If you think your audience might be unfamiliar with the convention of placing the reference manual section number in parentheses next to the command or function name, include the following text in the preface or another suitable location:

Numerals in parentheses next to a command or function name, for example, `ioctl(2)`, indicate the reference manual section where the manual page (“man page”) for the command or function is located.

The “man” part of the term “man page” when used generically is treated as a standard English word and capitalized in headings and at the beginning of a sentence. For example, “Man pages are very helpful.” However, the man command appears in monospace font and is always lowercase.

Error Messages

When documenting error messages, follow these guidelines:

- Reproduce the exact message text.
Use monospace font for the error message text.
- Format error messages in a way that differs from paragraph text.
- Always follow an error message with text describing why the message is displayed and what a reader can do to correct the problem.
- If you are documenting numerous error messages, consider compiling them into an appendix or even into a separate book.

The following examples show ways that you can format error messages in text and in a table, depending on your needs and your authoring environment.

EXAMPLE 1-6 Formatting Error Messages as Text

Current working directory, *directory*, not a valid install area

Cause: You are running the install program from a directory other than where the install package was installed.

Solution: You must change to the directory in which the install package was installed and run the install package again.

EXAMPLE 1-7 Presenting Error Messages in a Table

Message	Cause	Solution	
6000	Signal to Noise ratio too low on <i>name</i> , SNR = <i>number</i> db, Min SNR = <i>number</i> db (<i>text</i>)	<ul style="list-style-type: none"> ■ Loopback cable missing or faulty ■ Audio hardware problem (usually consistent failures) ■ System software problem (usually intermittent failures) 	Contact system administrator for assistance.
8000	Must be superuser to execute. The user does not have superuser privileges.	User does not have superuser privileges	Contact system administrator for superuser privileges.
8012	Invalid audio device <i>device-name</i> for Crystal test	Crystal test not supported on system audio	Provide required equipment.

Cross-References

Cross-references identify additional information about a specific topic that is available in the document or in a different source. To be useful to a reader, cross-references must be specific and accurate. Include all details that can help a reader find the information easily.

For information about how to write links for online documents, see [Chapter 4](#).

Several formats are acceptable for cross-references. These formats often depend on the location of the cited information, the length of the reference, and your authoring environment. The cited information can be in your document, a document produced by Sun, or a third-party document.

You can provide a cross-reference to a preface, chapter, appendix, section, figure, table, example, step, or glossary term in your book.

Do not use a cross-reference in the following situations:

- When the information is vital for a reader to understand the discussion
Instead, provide the vital information. If the information is extensive, you can summarize it and also include a cross-reference to the source.
- When the additional information is brief and you can just as easily repeat it
- When you cite safety information that describes how to protect a person, hardware, or software
For safety information, use Caution text. For more information, see [“Writing Cautions” on page 40](#).

Formatting Cross-References

The punctuation, capitalization, and fonts that are used for cross-references might be determined by your authoring environment. Otherwise, follow these guidelines:

- Use italic for the title of a book, journal, multivolume work, or magazine.
- Do not use italic for collections of books on the docs.sun.comSM web site or for the title of a CD.
- Use quotation marks or commas around a chapter title or section heading.

Some automatic cross-reference formats might not include the chapter title.

See [“Setting Administrative Options” on page 97](#).

See [Chapter 4, “System Board and Component Replacement,”](#) in the *SPARCserver 1000 System Service Manual*.

- If your authoring environment does not include the chapter title in a cross-reference, you might want to add some context depending on the surrounding text.

For more information about replacing system boards and components, see Chapter 4 in the *SPARCserver 1000 System Service Manual*.
- Capitalize “chapter,” “appendix,” “part,” “section,” “table,” “figure,” “example,” or “step” when these terms are followed by a number or letter.

See Chapter 6.
This process is shown in Section 3.5, “Null Modem Cabling.”
- Do not capitalize the word “page” when it is followed by a number.

Refer to page 42 for further information.

Writing Cross-References

Cross-references break the flow of your discussion. Therefore, write cross-references so that a reader easily recognizes when you have given a reference.

- Make sure that you introduce cross-references with clear phrases.

Incorrect: To reboot, see Chapter 4.
Correct: For instructions on how to reboot, see Chapter 4.
- If cross-references are brief, include them within sentences.

Use the `diff filename1 filename2` command to compare two files (see “Working With Text Files” on page 86).

If the cross-references require lengthy text references, put the cross-references in separate sentences.
Use the `diff filename1 filename2` command to compare two files. See Chapter 2, “Working With Text Files,” in *UNIX Simplified*.
- Do not provide the title of your document as part of the cross-reference.
- Do not cross-reference to a figure, table, or example that appears adjacent to the paragraph text.

Instead, provide the relative location, for example, “The following figure shows the File menu.”
- For a cross-reference to a book produced by Sun, include the book’s title.

See the *X Terminal Software Administrator’s Guide*.

Insert the word “the” before the book title if this insertion increases the readability of the sentence.

- For a cross-reference to a third-party book, include the title and author, with the publisher and year in parentheses.

One of the reference books used in preparation of this document was *The Deluxe Transitive Vampire* by Karen Elizabeth Gordon (Pantheon Books, 1993).

The title is sufficient for subsequent references in the same chapter.

- Do not cross-reference to a specific chapter or section of a third-party book.

Notes, Cautions, and Tips

Notes, Cautions, and Tips provide important information that diverges from the topic under discussion.

A *Note* usually provides information that is related to the text. A Note might contain an explanation, a comment, a reinforcement of the text, or a short expansion of the concepts in the text. A Note might also contain a statement that is intended to catch the reader's attention.

A *Caution* is mandatory text that you *must* provide to protect the user of equipment from personal injury or to protect hardware or software from damage.

A *Tip* describes practical but nonessential information that does not otherwise fit into the flow of the text.

Try to limit the number of Notes and Cautions to approximately two on a page. The inclusion of many Notes might indicate an organizational problem in the text.

Writing Notes

Few constraints exist on the text or format you can use in a Note. Consistency in both writing style and format is important so that a reader learns to recognize a Note that is interjected into the text.

When writing Notes, follow these guidelines:

- Use a Note to break out related, reinforcing, or other “special” information.
- Keep your Note short and relevant.
- Never use a Note to cite safety information.
- If your text requires many Notes, consider reorganizing the text to reduce the number of Notes that are required.

An example of a Note and its format follows.

Note – Keep the text short and relevant.

Writing Cautions

Unlike a Note, a Caution is not optional. You must provide a Caution in the following situations:

- When you describe a situation that has the potential to cause injury to a person, or when there is a risk of irreversible destruction to data or the operating system
- When you describe anything that has the potential to cause damage to equipment, data, or software

When writing or formatting Cautions, follow these guidelines:

- Be direct when writing a Caution.
First describe the potential hazard to data, equipment, or personnel. Then, describe the actions that are required to avoid the hazard.
- Insert the Caution before the information that might cause the potential hazard.
- Use the “lightning bolt” symbol when there is danger of physical harm to a person or damage to equipment due to an electrical hazard.
- Use the “heat” symbol when there is risk of personal injury from a heat source.
- Use the “exclamation point” symbol when there is risk of personal injury from a nonelectrical hazard or risk of irreversible damage to data, software, or the operating system.

Examples of Cautions and their graphical symbols follow.



Caution – Lithium batteries are not customer-replaceable parts. Do not disassemble them or attempt to recharge them.



Caution – Software hazard is present. Before copying data from a disk from an outside source, check the disk for viruses. Otherwise, you could contaminate the data on your hard disk.



Caution – Irreversible destruction can occur to data or the operating system. Follow the instructions carefully.



Caution – Electrical hazard is present. Leaving the side panel off the computer exposes you to dangerous voltage and risk of electrical shock. Do not leave the side panel off while you are operating the computer.



Caution – Hot surface. The surface of the CPU chip can be hot and could cause personal injury if touched. Do not touch this component.

Writing Tips

A Tip describes practical but nonessential information that does not otherwise fit into the flow of the text. Examples include a keyboard shortcut or an alternative way to perform a step in a procedure.

When writing Tips, follow these guidelines:

- Keep the text short and relevant.
- Do not introduce new topics or elaborate on conceptual material in a Tip.

An example of a Tip and its format follows.

Tip – You can also minimize a window by pressing Alt-F9.

Illustrations

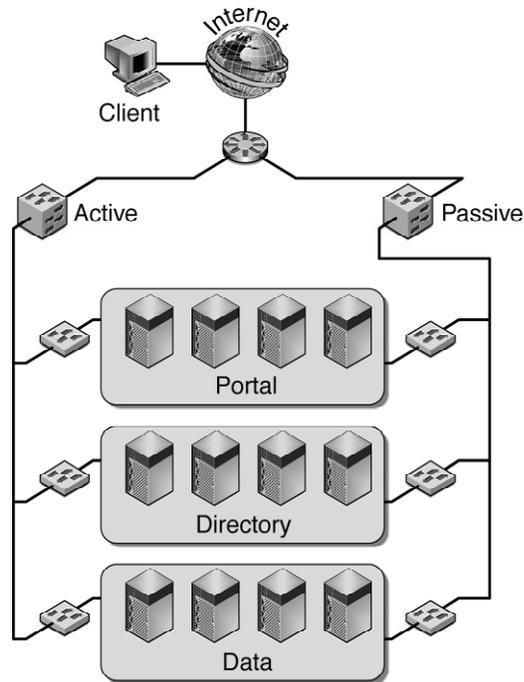
Several different types of illustrations are used in technical documentation as described in this section.

- [Broken Link \(Target ID: SGILLOS-1\)](#)
- [Broken Link \(Target ID: SGILLOS-36\)](#)
- [Broken Link \(Target ID: SGILLOS-38\)](#)
- [Broken Link \(Target ID: SGILLOS-39\)](#)
- [Broken Link \(Target ID: SGILLOS-41\)](#)
- [Broken Link \(Target ID: SGILLOS-42\)](#)
- [Broken Link \(Target ID: SGILLOS-43\)](#)
- [Broken Link \(Target ID: SGILLOS-45\)](#)

Diagrams

Diagrams encompass a wide range of illustration uses, from simple flowcharts and presentation aids to complex architectural diagrams.

EXAMPLE 1-8 Diagram



Online Graphics

Online graphics include drawings, icons, and navigational buttons. Online graphics are usually raster images that are highly compressed and optimized for web delivery. If online graphics must be altered, locate the original source files and submit the files to the technical illustrator on your team.

EXAMPLE 1-9 Online Graphics

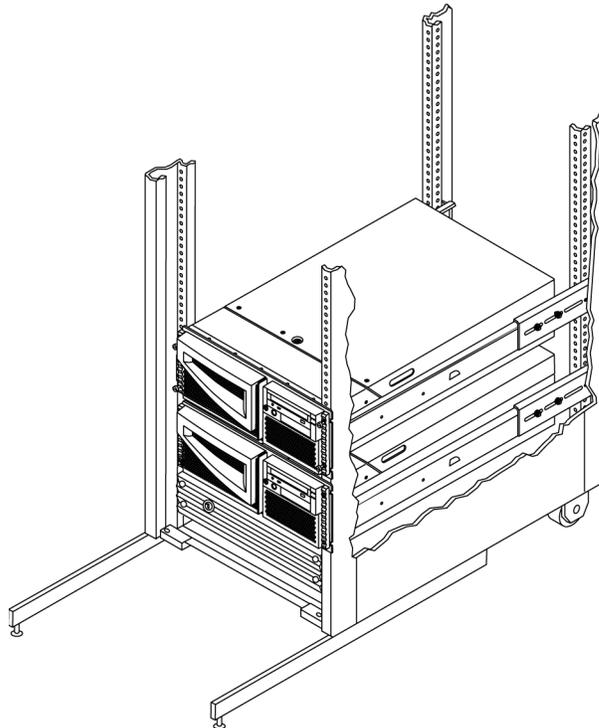
EXAMPLE 1-9 Online Graphics *(Continued)*



Line Art

Line art illustrations of hardware are usually based on engineering diagrams or computer-aided design (CAD) drawings. When possible, try to locate the original vector-based source file and use it in your document. The vector format preserves quality and also provides the most versatile image editing options.

EXAMPLE 1-10 Line Art

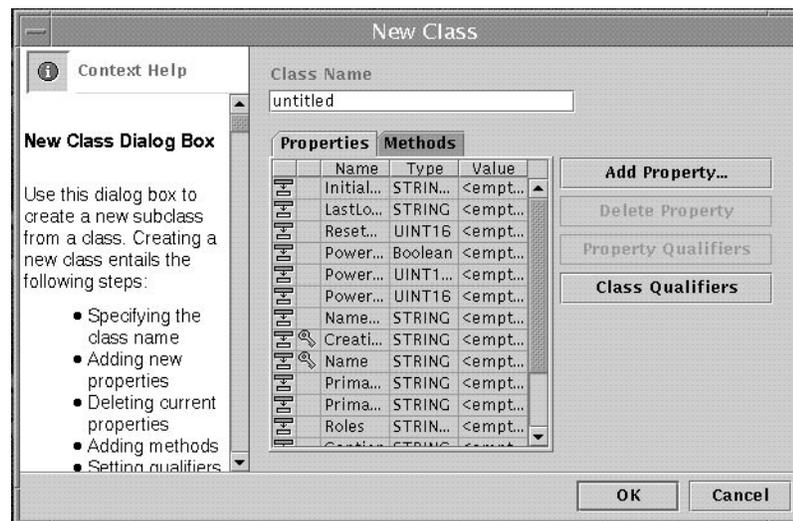


Screen Captures

A screen capture is always created as a raster image. Screen captures represent an exact snapshot of the dots that are displayed on a computer monitor. Once created, screen captures cannot be easily resized without distortion. A technical illustrator can advise you on the proper way to scale and crop screen captures, if necessary.

See [Broken Link \(Target ID: SGILLOS-63\)](#) for more information.

EXAMPLE 1–11 Screen Capture



Composites

A composite illustration is a vector graphic or raster image with text labels or callouts placed on top. Localization considerations dictate that the background images must exist on a layer separate from the layer displaying the superimposed text labels. A composite illustration combines vector-based artwork and raster images on separate layers within the same file. Textual elements should also occupy separate layers. Layering illustrations facilitates future editing, and aids localization efforts.

EXAMPLE 1–12 Composite Illustration

EXAMPLE 1-12 Composite Illustration *(Continued)*



Photographs

Photographs can be captured in raster format from a digital camera or scanned from a photo print. File sizes can be large, depending on the resolution, size, and number of colors used. A technical illustrator can edit and manipulate photographs.

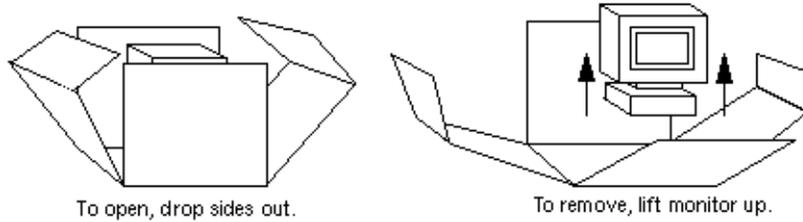
EXAMPLE 1-13 Photograph



2-D Action Sequences

You do not have to reserve animation for films or online documents. You can use the equivalent of animation effectively in print. The following example shows an action sequence that illustrates how to unpack a shipping carton.

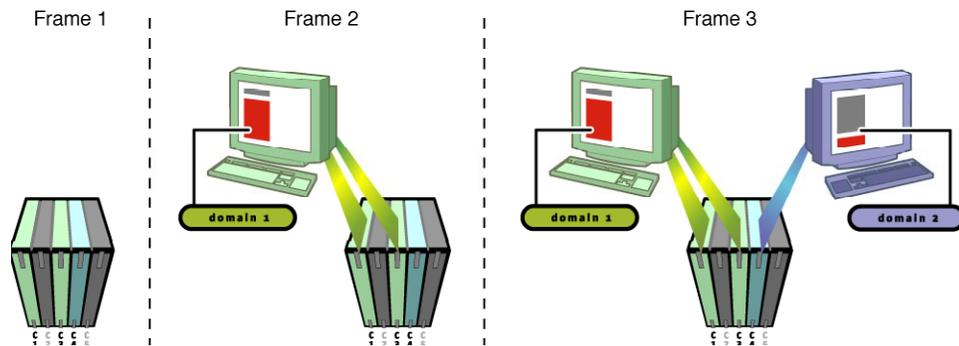
EXAMPLE 1-14 2-D Action Sequence



Web Animations

Web animations can be created as vector graphics or raster images. The file format and tools that illustrators use to create animations often depend on the web browser capability of the end user. Animations can impact download times, so they must be well designed and used sparingly. An illustrator's help is critical to the design of effective and compact animations.

EXAMPLE 1-15 Animation



Writing Style

If *content* is *what* you communicate, then *style* is *how* you communicate. Writing style is determined by all the decisions that you make while creating a document, such as the type and tone of information you present, choice of words, language and format consistency, use of technical terms, and so forth. This chapter presents some guidelines for writing effectively.

This chapter discusses the following topics:

- “Why Is Style Important?” on page 47
- “Stylistic Principles” on page 48
- “Some Basic Elements of Style” on page 49
- “Write for the Reader” on page 55
- “Avoid Style That Could Offend the Reader” on page 58
- “Learn to Improve Your Style” on page 61
- “Work With an Editor” on page 62
- “Common Writing Problems to Avoid” on page 62

Why Is Style Important?

Good style is synonymous with effective communication. Documents that communicate effectively reduce costs and increase customer satisfaction. Style that responds to the requirements of readers results in fewer revisions, fewer calls to customer support, reduced training needs, and easier translation. Customer satisfaction increases when accurate and functional documentation enables customers to use a product quickly and efficiently.

Stylistic Principles

Keep in mind a few stylistic considerations when writing computer documentation: simplicity, accuracy, and consistency. Two principles underlie stylistic considerations:

- **Time is a valuable commodity.** Readers of computer documentation are generally in a hurry. Readers turn to documentation to find answers to problems and are impatient to get on with the task at hand. Write in a style that aids the customer's speedy understanding of the product.
- **Readers are worldwide.** International markets are a significant source of revenue. Documentation is being translated more frequently than ever before.

For more information about style and internationalization, see [Chapter 6](#).

Write Simply, Directly, and Accurately

People most often read technical manuals to find answers to problems that they are having with software or hardware. They need their questions answered concisely and accurately. Concise writing means readers do not have to contend with unnecessary technical jargon. Write simple and direct sentences. Use short, familiar words, but respect the reader's level of technical knowledge and competency. Simple, direct, and accurate writing makes a document more usable and easier to translate.

Be Consistent

Readers project some significance onto every change in tone, language, or typographic convention. A consistent style enables readers to internalize the language and text conventions of a document. As a result, understanding occurs more easily and significant points stand out more clearly. Consistency is one of the most valuable aspects of good style.

Some Basic Elements of Style

At every level of writing, you must make stylistic decisions, from word choice to paragraph structure. The following sections discuss a few aspects of these style decisions.

Avoid Jargon

Writers frequently incorporate jargon associated with the subject matter into their documentation. Jargon can be difficult for the “uninitiated” to understand. In addition, jargon can be very difficult to translate.

In the following example, a writer uses the specialized phrases of the computer industry in a hardware manual:

Powering down a system means turning off the power. To avoid losing data, shut down the system before powering down. For details on how to shut down a system, see the previous section.

The writer introduces the phrase “powering down,” while admitting that the phrase only means turning off the power. The writer further confuses the reader by introducing “shut down” immediately after the term “powering down.”

Rewrite: Using common English shortens the preceding example and permits the writer to be more specific and helpful.

To avoid losing data, follow the shutdown procedure that is described in the previous section *before* turning off your computer.

When you have to use computer terms, introduce them in italic, explain them, include them in a glossary, and use them consistently.

Use Active Voice and Passive Voice Appropriately

Always try to write in the active voice, but do not fear the correct, thoughtful use of the passive voice. Writing entirely in the active voice is nearly impossible to achieve, so know when to use the passive voice.

Because writers in the computer industry often insist on using the active voice, the writer of the following example introduces a message with this sentence:

As soon as the application completes, the following message displays.

Rewrite: A message does not display. Rather, a message appears or is displayed by the system. The passive voice can indicate that the subject is the receiver of the action rather than the performer.

As soon as the application is finished, the following message is displayed.

Or

When the application finishes, the following message appears.

Make your writing active by concentrating on the activity of your subject. Use the passive voice when it is unavoidable because the performer of the action is either unimportant to the reader or unidentifiable.

Use Present Tense and Future Tense Appropriately

Readers use technical documents to perform tasks or gather information. For readers, these activities take place in the present. Therefore, the present tense is appropriate in most cases. Only use the future tense when necessary.

Incorrect:

If you attempt to copy a directory without using this option, you will see an error message.

Correct:

If you attempt to copy a directory without using this option, you see an error message.

Use Sentence Structures That Enhance Understanding

Convoluting sentences or sentences densely packed with information cause confusion, slow the reading process, and are difficult to translate. Any sentence that attempts to convey too much information is too long, regardless of its word count. Use punctuation, rhythm, and clarity of meaning to regulate sentence length and to attain a style that is easy to understand.

Write as if you were talking to a person, rather than formulating a law or theorem. Consider the following example:

To scroll directly to a relative location in the document, move the pointer into the bar at the point that represents the relative location of the text in the document.

Comments: A person would never speak that sentence. The sentence is grammatically correct, but it is stiff and formal. Ask yourself, "Does this sound like me responding to a question?"

To get a response such as the previous example, a person would have had to ask, "How can I scroll directly to the relative location of text in my document?" More likely the person would ask, "If what I want to read is way up or way down in the document, how can I get to it without scrolling through every line?"

Rewrite: Respond naturally to the reader’s question. Remember that the reader is a person who wants to do something.

If the text that you want to read appears elsewhere in the document, guess where it is. Then, move the pointer to that spot in the scroll bar, and click mouse button 1.

Avoid Complex, Conjoined Sentences

A long, complicated sentence that contains several concepts is difficult to translate and to understand. Try to keep sentences to one topic. Rewrite the sentence or break the sentence into several shorter sentences.

Incorrect:

The descriptions in this chapter follow the flow of data through an organization, starting with the back-end data repositories and working through them to the user-access layer provided by the web server, making the assumption that these components are connected by a reliable, available, and scalable network infrastructure.

Correct:

The descriptions in this chapter follow the flow of data through an organization. The flow begins with the back-end data repositories. Data then works through the repositories to the user-access layer provided by the web server. In these descriptions, the components are connected by a reliable, available, and scalable network infrastructure.

Also, a sentence that contains more than two uses of “and” or “or” can be difficult for readers to understand. Readers have difficulty with such sentences when multiple conjunctions join more than one main idea.

Incorrect:

From the addresses tab, you can add or delete networks, and add or delete IP addresses individually or in blocks.

Correct:

From the addresses tab, you can perform the following operations:

- Adding or deleting networks
- Adding or deleting IP addresses individually or in blocks

Separate Independent Clauses Appropriately

Readers can parse simple sentences more easily than compound sentences. Therefore, avoid combining independent clauses with “and.” Instead, write two separate sentences.

Incorrect:

The Motif program uses Motif Version 2.1, and the old shared library uses Motif Version 1.2.

Correct:

The Motif program uses Motif Version 2.1. The old shared library uses Motif Version 1.2.

Limit Subordinate Clauses

Readers can have difficulty parsing sentences that contain a number of subordinate clauses. Limit subordinate clauses, such as “She said that Kathy said that she updated the file.”

Use Positive Constructions

Negative constructions can cause confusion. Use positive constructions to state advice or instructions.

Incorrect:

You cannot reconnect to the server without restarting your computer.

Correct:

Restart your computer to reconnect to the server.

Use Parallel Structure

When you use “and” or “or” to link phrases, the reader expects parallelism on both sides of the conjunction. Be sure that your linked phrases are of the same type, for example, noun phrase or verb phrase.

Incorrect:

You can use Mail Tool for composing and to send messages.

Correct:

You can use Mail Tool to compose messages and to send them.

Avoid the Subjunctive

To avoid confusion by readers unfamiliar with the subjunctive mood, use the indicative mood instead where possible.

Subjunctive:

The procedure requires that the packages be first installed.

Indicative:

Before performing this procedure, ensure that the packages are installed.

Differentiate Between Restrictive Clauses and Nonrestrictive Clauses

Make sure that you distinguish between restrictive and nonrestrictive clauses. Consider the differences in meaning for the following two sentences:

- Check the LED that is on the front panel. (restrictive)
- Check the LED, which is on the front panel. (nonrestrictive)

In the first sentence, the reader is told to check the LED specifically on the front panel, not the one on the side panel or back panel.

In the first part of the second sentence, the reader is told merely to check the LED. The second part of the sentence also states that the LED happens to be on the front panel. This clause implies that no other LED exists anywhere else. The minor difference in meaning could confuse translators or nonnative speakers of English.

Make sure that you include the word “that” when introducing a restrictive clause.

Incorrect:

This chapter provides the information you need to install the software.

Correct:

This chapter provides the information that you need to install the software.

Divide nonrestrictive clauses that are associated with a relative pronoun into separate sentences. This separation can help the translator to understand the meaning.

Unclear:

This topic describes how to write makefiles that take full advantage of CodeManager and ParallelMake, the make utility that is included with the SPARCworks™/TeamWare release.

Clear:

This topic describes how to write makefiles that take full advantage of CodeManager and ParallelMake. ParallelMake is the make utility that is included with the SPARCworks™/TeamWare release.

Write Concise Paragraphs

Always write concisely. Avoid paragraphs that are so dense with information that the reader must struggle to understand the information. For instance, the reader struggles to make sense of the following paragraph:

With Gizmo, users of standard mail programs, such as a window-based mail tool, can transparently exchange electronic messages with users of private or public mail systems that conform to X.400 and ISO protocols. Users can reach this broader community without affecting their current electronic-mail routines. Gizmo is both a

gateway and a message relay (message transfer agent, MTA, in CCITT terminology). The gateway translates standard mail messages conforming to DoD Simple Mail Transfer Protocol (SMTP) specifications to and from the format specified by X.400. The MTA provides full message analysis and routing. Gizmo builds the Gizmo OSI foundation for messaging over a local area network, and Gizmo OSI combined with Gizmo X.25 for use over packet-switched data networks.

Comments: The paragraph attempts to deliver too much information. Almost every sentence in the example conceals a smaller bit of information, which in turn conceals an even smaller bit of information, and so on.

Even the reader who understands all of the technical language faces the chore of sorting and retrieving all the information. Count the facts and concepts presented in each sentence. Do not count repeats.

- **First sentence: 12** – Gizmo, users, standard mail programs, window-based mail tool, transparently exchange, electronic messages, private mail systems, public mail systems, conform, X.400, ISO, protocols
- **Second sentence: 2** – Broader community, current electronic-mail routines
- **Third sentence: 5** – Gateway, message relay, message transfer agent, MTA, CCITT
- **Fourth sentence: 6** – Translates, standard mail messages, conforming, DoD, Simple Mail Transfer Protocol (SMTP) specifications, format
- **Fifth sentence: 2** – Full message analysis, routing
- **Sixth sentence: 5** – Gizmo OSI foundation, local area network, Gizmo X.25, packet-switched, data networks

Total: 32

The reader's burden is to receive, translate, comprehend, or otherwise deal with one technical fact or technical concept every seven words.

The issue is clarity, not space.

Look at each paragraph that you write. If the paragraph looks too long, it *is* too long. Present general information at the beginning of the paragraph. Add details in descending order of importance toward the end. Use as much space and as many paragraphs as you need to make sense.

Rewrite: Divide some sentences into two sentences. Divide the example into several paragraphs.

Gizmo enables users of standard mail programs to exchange electronic messages with users of other mail systems. Gizmo works with systems that conform to X.400 and ISO protocols.

With Gizmo, users of mail programs, such as a window-based mail tool, can reach this broader community without affecting their current electronic-mail routines.

Gizmo is both a *gateway* and a message relay. In CCITT terminology, the relay is called a *message transfer agent (MTA)*.

- The gateway translates mail messages that conform to DoD Simple Mail Transfer Protocol (SMTP) specifications. The messages are translated to and from the format specified by X.400.
- The MTA provides full message analysis and routing.

Gizmo builds the Gizmo OSI foundation for messaging over a local area network. Gizmo also combines the OSI with Gizmo X.25 for use over packet-switched data networks.

Write for the Reader

As a writer, you research, organize, and communicate information for the reader, who depends on you. In your relationship with the reader, you are the expert. Keep this point in mind when you make decisions about what information to present and how that information addresses the reader's questions.

Make Decisions for the Reader

Often a product provides several different ways to accomplish a single task. You might decide that you owe the reader an explanation of each method. However, remember that the reader is more interested in using the product than in understanding all options. Choose the best method for most of your audience, and tell the reader to use that method.

After you commit to the best course of action, you might explain to the reader that other methods exist. Tell the reader where to find your descriptions of those methods. Also, tell the reader why and in what situations options A, B, and C are useful.

For example, the writer of a user's guide for a DOS application included all of the possibilities in this text:

The system then displays the following message:

```
Accept the path C:\GIZMO? (y/n)
```

Type y to accept the default path C:\GIZMO, or n to designate a different path.

Comments: The writer reveals consequences but no guidelines. The details seem to be there, but the entire passage is ambivalent. The writer does not tell the reader why the choice exists. The reader is left to decide without guidance.

Watch for words that could lead to unguided choices. Avoid ambivalent words and phrases, such as the following:

- It is possible to
- Maybe
- Perhaps
- Either, or
- If you want
- Should, would

When you write these words or phrases, or similar ones, make sure that you are prepared to explain the benefits of the choices.

Rewrite: The writer recognized that the passage was ambivalent because the passage did not guide the reader. The rewritten passage guides the reader with this explanation.

The system displays the following message:

Accept the path C:\GIZMO? (y/n)

If you keep all your applications in a particular directory, or if you want to store GIZMO on a different hard disk, type n to specify your own path.

If you want to create the default C:\GIZMO path, type y.

Anticipate the Reader's Questions

One of the most important contributions a writer makes is to anticipate the reader's questions and provide appropriate answers. A writer must anticipate questions about related topics as well and provide cross-references to where those questions are answered. As the subject matter expert, a writer can create a climate of understanding that is far more significant than merely recounting facts about the product.

For example, when you review a procedure in your document with the reader's perspective in mind, ask these questions:

- What assumptions have I made about what the reader knows?
- Do steps follow in a logical sequence? Are there any gaps in the instructions?
- Are even the simplest words used precisely? For example, did I write "any" when I meant "all"?
- Did I define all technical terms?
- Have I incorrectly put conceptual and explanatory material within steps, rather than in paragraph text?
- Did I structure each step so that the condition is stated before the action?

Write, for example, "If the card's I/O address conflicts with another device, remove the card and change the I/O address according to the manufacturer's instructions." Do not write "Remove the card and change the I/O address according to the manufacturer's instructions if the card's I/O address conflicts with another device." State conditions before actions unless this practice needlessly restricts you.

Anticipate Questions

In the following example, the writer of a tutorial clearly explains the function of the clipboard. However, the writer realizes that the explanation might lead to a question: "What happens if I cut or copy another selection?" By anticipating this question, the writer is ready to answer the question in a Note.

When you cut or copy text, the text is put aside for you on the clipboard, a temporary text storage facility. When text is on the clipboard, you have the option of pasting the text back into the file in any location you choose.

Note – As soon as you cut or copy text again, the most recently cut or copied selection replaces the text previously on the clipboard.

Use Cross-References to Address Anticipated Questions

A lack of cross-references can cause the reader great frustration. Often the reader of technical manuals skips important sections. You can presume, therefore, that the reader has not read anything in the book other than the current topic of the current paragraph.

For example, the reader has a question about the file system hierarchy. The reader opens the manual, finds the topic in the table of contents, turns to the page, and reads:

As mentioned above, the file system directory hierarchy is a part of the "landscape" that you want to become familiar with.

Comments: No reference to either the hierarchy or the “landscape” appears above this sentence. The sentence dooms the reader who has not read everything. The writer presumes that the reader has carefully read everything before the statement that the hierarchy or “landscape” has already been mentioned. Consequently, the reader who goes directly to this section must search for the information.

When using cross-references, do not use the words “above” and “below” to refer to items that are *literally* above and below. Remember that something that appears “above” in today’s draft could be “on the previous page” in tomorrow’s draft, and these terms are even more problematic in online documents. Using the words “next,” “following,” “previous,” and “preceding” is acceptable if the item referenced is nearby.

Do not write phrases like “As stated in a previous chapter.” This reference is too far away to use “previous.” Chapters have numbers and names, sections have names, and pages have numbers. Find the location of the information. Cite the location in a specific cross-reference. If the information is not too long or complex to repeat, repeat it.

Rewrite: Cite the specific location of the information:

As explained in detail in “Issues” on page 2, the file system directory hierarchy is a part of your computer’s “landscape.”

Avoid Style That Could Offend the Reader

At times, stylistic considerations must go beyond issues of preference. You must also be aware of writing style that could offend the reader. Though offending the reader is not your intention, the use of humor and sexist linguistic conventions can offend. Humor and, especially, sexism are inappropriate in technical writing.

You can also offend the reader by being unintentionally condescending. In keeping your message clear, do not mistake economy of expression for simplicity. Do not underestimate the technical sophistication of the reader.

Avoid Humor

A great temptation for writers of computer documentation is to inject a note of levity into the text. Resist this temptation. Even genuinely humorous commentary is a distraction and becomes annoying on subsequent readings. Likewise, humor that descends into user-friendly chumminess never works. A sympathetic reader might forgive you for trying to “lighten up” the text, but another reader might resent a chummy tone.

For example, this humor was injected into a tutorial:

You can use a mouse (one without fur) in conjunction with the window system of your computer.

Comments: The phrase “one without fur” detracts from the content of the sentence and distracts the reader. The goal of the sentence was to tell the reader that the mouse is related to the window system. The apparent goal of the humor was to reassure the reader that the mouse is “friendly.”

Rewrite: The following revision pursues those goals in a direct, conversational tone:

The mouse is a versatile tool that you use with the window system of your computer.

Humor is difficult, if not impossible, to translate successfully. Humor is usually cultural. What might be funny to an American could be offensive to readers in another country.

Avoid Sexist Language

Regarding the issue of sexism in language, appearances count.

In many cultures, language has developed so that “men” often refers to “men and women,” and “he,” “him,” and “his” are regarded as gender-neutral words. In decades past, this sentence might have been perfectly acceptable:

Ask your system administrator for his advice.

Today, this usage of “he” and “his” is far less acceptable. These pronouns assume too much about the gender of an individual. Writers who defend the use of such pronouns must contemplate the following: Many readers could interpret a writer’s intentions negatively and could consciously or subconsciously reject the work.

Your challenge is to eliminate real and perceived sexism from your writing.

Use Acceptable Methods to Achieve Common Gender

To achieve common gender, you could do the following:

- Use plural antecedents and plural pronouns as often as possible.

Awkward: Tell each user to shut down his machine.

Better: Tell the users to shut down their machines.

- Eliminate the possessive as much as possible when you are writing in the third person.

Awkward: Ask your system administrator for his advice.

Better: Ask your system administrator for advice.

- Use the word “you.”
 - Awkward:** If the user decides he wants to change the settings, he should follow these steps.
 - Better:** If you want to change the settings, you should follow these steps.
- Instead of using a personal pronoun, repeat its antecedent when doing so does not sound unpleasant or unnatural.
 - Awkward:**
If a system administrator installed the software, wait until he can help you.
 - Better:**
If a system administrator installed the software, wait until the system administrator can help you.

Use the following suggestions carefully:

- Give names to “third persons.”

This technique does not work for all types of documentation, but this technique can be effective in a tutorial or other type of user’s guide. Consider using names, male or female, to humanize your writing and eliminate the “he” or “she” clumsiness.

For example, if you want to tell the reader how to copy a file from someone else’s directory, try this approach:

 - Before you can copy a file from someone else’s directory, Sally Smith’s directory for example, you need permission. Ask Smith to set her file permissions to grant you access. After she has changed permissions, you can copy the file.
- Create your own techniques.
 - Keep in mind that the writing should sound natural, be taken literally, and inform.

Avoid Unacceptable Methods to Achieve Common Gender

Eliminating the appearance of sexism by writing poorly, ungrammatically, or self-consciously is not a good solution. Keep the following guidelines in mind:

- Never write “s/he.”
- Use “their” with a plural antecedent.
 - For example, “ask your system administrator for their advice” is incorrect.
- Try to avoid “his or her,” which is grammatically correct but awkward.
- Even in pursuit of the goal of eliminating perceived sexism, never dehumanize people with the pronoun “it.”

Do Not Talk Down to the Reader

A “naive reader” is not unsophisticated. Treat the reader as a peer.

Unintentionally, this sentence is condescending:

Don't be afraid to play with the computer. The computer won't bite you.

Comments: The sentence belittles the reader's anxiety. In an effort to reassure the naive user, the writer seems to belittle the reader's genuine fear of doing something wrong. Of course, the computer will not “bite” the user, and of course the reader can see the writer's point. But the writer makes this point as though writing for a juvenile. A reader might find the tone condescending and insulting.

Remember that the reader might be naive only in relation to the particular computer technology you are documenting. Credit even the least experienced computer user with intelligence and life experience. Show respect for this person when you write.

Rewrite: Get directly to the point, and be positive rather than negative.

Experimenting with your computer is a great way to learn, and you can quickly undo almost any error.

Learn to Improve Your Style

An effective writing style is not acquired magically. Rather, good style is learned. One way to learn good style is to analyze examples of effective technical writing. You will see that writers of effective technical prose present material as follows:

- When the reader needed the material and in a logical progression
- Where the reader expected to find the material
- In a tone and with language that the reader could immediately understand
- In a consistent form that the reader could easily interpret

Following these principles and the guidelines in this chapter can improve your writing style.

Work With an Editor

Technical writing is collaborative. Other writers can provide invaluable help. In addition, always work with an editor when you write a manual. A good editor is an invaluable partner in producing effective documentation. An editor can often assist you in determining the best way to present information to the customer and to international readers. An editor relates to a document as an advocate for the reader, and as a professional who can critique your work. An editor is often the first customer to read your document.

For further discussion of the partnership between writers and editors, see [Chapter 8](#).

Common Writing Problems to Avoid

This section identifies words, phrases, constructions, and practices that often lead to abstract or unclear meaning, disjointed cadence, or unnatural and improper language usage.

Anthropomorphisms

Anthropomorphisms attribute human motivation, characteristics, or behavior to inanimate objects. Anthropomorphisms often creep into technical writing. Avoid using anthropomorphisms. Follow these guidelines:

- Do not ascribe human qualities to nonhumans, or machine qualities to humans.

Use similes or words within quotation marks instead. For example:

The program differentiates among remote procedure calls and acts on one type as though it recognizes its unique “voice.”

The example combines simile (“...as though...”) with the ironic use of a word set off within quotation marks (“voice”).

- Keep in mind that no computer has feelings or thinks. No computer holds opinions, “wanting” one thing, “disliking” another.

Instead, the computer “accepts” only certain things. Software does not “look” at a directory, but software might “check” one.

- Be sure to use the prepositions “in” and “on” correctly.

No person can ever be “in” a text editor or “in” any of its modes. A person might be using a text editor, or the text editor might be in insert mode. A person cannot “move around in a file,” but the pointer position might move, or the screen display

might change. No person is ever “on” a server, but the system might be on one.

- Do not use “We recommend” or “It is recommended that...”

A company does not recommend, or hope, or advise. Another company is not a “they.” Instead of saying “We recommend that you remove the cover first,” just go ahead and tell the reader to do so. Or start out with the benefit of the behavior. Instead of saying “It is recommended to use the application’s class name as the volume name,” say “Use the application’s class name as the volume name to ensure that the volume name is unique and meaningful.”

- Rewrite anthropomorphisms whenever you can.

However, there might be occasions when an anthropomorphism is an industry standard. For example, you might say the system “listens” to a network to determine when the network is free.

Commands as Verbs

Command names are only names. Command names are never verbs.

Incorrect: First cd to the new directory.

Correct: First change to the new directory by using the cd command.

Redundancies

You create redundancies when you fail to consider the literal meanings of the words that you choose. Some common examples of redundancies and alternatives are listed in the following table.

TABLE 2-1 Common Redundancies and Alternatives

Redundancy	Alternative
Accidental mistake	Mistake
Add additional	Add
Add on	Add
Already exists	Exists
At this point in time	At this point, at this time
Basic fundamentals	Fundamentals
Boot up	Boot
Check to be sure	Check, ensure, make sure

TABLE 2-1 Common Redundancies and Alternatives *(Continued)*

Redundancy	Alternative
Close proximity	Close, near, nearby
Connect together	Connect
Create a new	Create
Dial up	Dial
Edit an existing	Edit
Existing conditions	Conditions
First create	Create
Group together	Group
Necessary prerequisites	Prerequisites
Print out	Print
Specific requirements	Requirements
Start up	Start
Still pending	Pending
Time out	Time
Whether or not	Whether, if

Test the usefulness of each modifier you choose. If the modifier does not help the construction, for example, if it does not amplify, clarify, or intensify the meaning of the word that it modifies, do not use it. If the modifier's meaning is equal to the meaning of the word that it modifies, or if the phrase or clause is a virtual restatement of a point previously made in the sentence, do not use it.

Well-used intensives, however, often add emphasis to the sentence. For example, "turn on your system for the very first time" might appear redundant at first glance. Something cannot be any more "first" than first. But the intensive, "very," makes clear that the ensuing description happens only once in the system's life. Use this technique sparingly.

Online Writing Style

Online documents have characteristics that distinguish them from their printed counterparts. For example, online documents have the capability of linking to related information. However, they also have screens that are less easily read than printed pages.

Writers must follow guidelines for online writing style in addition to style guidelines that apply to all forms of technical writing.

This chapter discusses the following topics:

- “About These Guidelines” on page 65
- “Solving Online Writing Problems” on page 66
- “Creating an Effective Document Structure” on page 67
- “Writing Short, Self-Contained Topics” on page 76
- “Constructing Scannable Paragraphs, Headings, and Lists” on page 78
- “Preserving Context in Online Documents” on page 85

About These Guidelines

The guidelines in this chapter focus on **online text** that is intended to be read in a web browser, such as technical documentation on the docs.sun.com web site. This chapter does not discuss software tools, web browsers, screen design, graphics, or document delivery methods.

This chapter uses typographic conventions that are optimized for online documents. These conventions might differ from the conventions that are used in the rest of this book. For example, this chapter uses underscores before and after link text to show where to place links in the text. Bold type is used to emphasize most guidelines.

The online writing guidelines in this chapter do not apply to the following:

- PDF documents
- PostScript™ documents
- Man pages

This chapter uses the word “page” to refer to an online page or web page. A “page” is equivalent to an online file or web file. When “printed” precedes the word “page,” the reference is to hard copy.

Note – For single-source document writers: If you encounter a conflict between online and print writing guidelines, follow the guidelines for your primary delivery mode.

Solving Online Writing Problems

Online writing presents special challenges for writers. The following table summarizes the problems that are unique to online writing and presents possible solutions.

TABLE 3–1 Online Writing Problems and Solutions

Problem	Solution
Online readers cannot easily envision the size or complexity of an online document or the relationship among various topics.	Create an effective document structure that is obvious and easy to navigate. See “ Creating an Effective Document Structure ” on page 67.
People do not like reading online text and become frustrated when they cannot quickly find what they want.	Write short, self-contained topics and construct simple, scannable text. Both strategies help reduce information overload and make it easier for readers to find quick answers to their questions. See “ Writing Short, Self-Contained Topics ” on page 76 and “ Constructing Scannable Paragraphs, Headings, and Lists ” on page 78.
Text is more difficult to read online.	Construct simple, scannable text. See “ Constructing Scannable Paragraphs, Headings, and Lists ” on page 78.

TABLE 3–1 Online Writing Problems and Solutions *(Continued)*

Problem	Solution
Most readers go directly to a topic to find information. Because they have no context from earlier reading, they can easily become disoriented.	Preserve context to keep readers from becoming lost or disoriented in a document. See “Preserving Context in Online Documents” on page 85.
Links can be annoying, especially when the content and value of the material located at the link destination is unclear.	Construct effective links that enable readers to make their own decisions about how to access information. Avoid distracting or disorienting readers by overlinking or by providing insufficient context for links. For more information about links, see Chapter 4 .

Creating an Effective Document Structure

Readers cannot easily visualize the size or complexity of an online document because they view only one window of text at a time. Both the absence of hard copy to reveal the document’s general dimensions and the small window size also create challenges for readers. These challenges combine to make it difficult for readers to see how various topics are related.

Help readers avoid becoming “lost in cyberspace.” Readers who must retrace their steps or move forward with no clear idea of where they are going are easily frustrated. To reduce the risk of reader disorientation, help readers visualize the structure of your online document.

To create an effective document structure, do the following:

- **Determine how much control to give readers.**
When planning your online document, decide how much control readers should have over the sequence of topics or the paths that they can follow. Consider the purpose of your document, the scope and complexity of your technical content, and the skill level of your audience with online media.
- **Provide links that anticipate readers' needs.**
Provide links that are embedded in the text and that point to other relevant content in the document. Also provide links in a jump list. See ["Use Jump Lists" on page 82](#) and ["Writing Jump Lists" on page 28](#). For guidelines on writing link text, see [Chapter 4](#).
- **Use an easy-to-follow, meaningful structure.**
If your document requires many clicks to find the information readers seek, rethink its structure.

Note – Do not describe how to navigate in your online document unless it has truly unusual features or you anticipate that many inexperienced online readers will use your document.

Use an Easy-to-Follow, Meaningful Structure

The following table suggests ways to structure an online document. These structures are not mutually exclusive. You can use these high-level and low-level organizational strategies together in the same document.

TABLE 3-2 Ways to Structure an Online Document

Structure	When to Use
Hierarchy	Use for a large number of layered topics that are linked together. This structure organizes content at the <i>section</i> level.
Inverted pyramid	Use for text within individual sections. This structure organizes content at the <i>paragraph</i> level and <i>sentence</i> level.
Table	Use when each topic contains the same subtopics. This structure typically organizes content at the <i>paragraph</i> level.
Flow diagram	Use for high-level overviews to show how topics or groups of tasks or procedures are related.
Task map	Use for task-based information to give users quick access to step-by-step instructions.

Organize by Hierarchy

In an online document organized by hierarchy, high-level generalities and overviews offer a preview of what lies below. Levels within hierarchies can be based on importance, frequency of use, or complexity.

Be careful not to create too many hierarchical levels that bury important information. You must balance the need to divide text into short, self-contained topics against the risk of creating valueless intermediate screens.

In a technical manual that is organized by hierarchy, the top three levels serve as a clickable table of contents from which readers can jump to various topics. Within the text of the document, readers can jump to related material, both in and out of the document, through links.

In the following example, a plus sign indicates that a topic contains hidden subtopics. The underscores indicate links.

EXAMPLE 3-1 Organizing an Online Document by Hierarchy

Sun Ultra 60 Reference Manual
+ Preface
+ Back Panel Connectors
Media Independent Interface (MII) Connector
+ Twisted-Pair Ethernet (TPE) Connector
+ SCSI Connector
Audio Ports
Audio Specifications
+ Modem Setup Specifications
Identifying Jumpers
Flash PROM Jumpers
Serial Port Jumpers
+ System Specifications

Organize by Inverted Pyramid

When organizing by inverted pyramid, you place the conclusion and a short summary of the main ideas at the beginning of the topic. The details follow in decreasing order of importance. Readers can digest the main points even if they stop reading before reaching the end of the document.

The inverted pyramid structure, typically used in newspaper writing, is also appropriate for long narrative text in online technical documents. Use this structure to organize paragraphs and sentences within a section of narrative text.

To create an inverted pyramid structure, follow these guidelines:

- Use clear, meaningful headings or lists at the beginning of a topic.
- Create separate paragraphs or topics to emphasize important points.
- Do not bury your main point in the middle of a paragraph or topic.

Note – The preceding bulleted items do not appear in bold because they contain no explanatory text.

The following text begins by defining “device driver optimization.” The text then provides links to sections that describe three types of optimization guidelines: general, transmit, and receive. Details appear later in three separate subsections. If long enough, each section could be divided into one or more separate pages.

EXAMPLE 3-2 Organizing an Online Document by Inverted Pyramid

<Head1>Optimization Guidelines for Network Device Drivers

Optimization in a device driver means that the software interacts directly with a hardware device and mainly fields asynchronous interrupt events.

To assist you in the design of network device drivers in the Solaris kernel, this paper provides three types of optimization guidelines:

- [__General__](#)
- [__Transmit__](#)
- [__Receive__](#)

<Head2>General Optimization Guidelines

Some guidelines are universal:

- Use tail calls for stack frame creation.
- Avoid deeply nested automatic variables.
 - Compilers can do a better job of register allocation when the scope of automatic variables is limited.
- More guidelines.

<Head2>Transmit Optimization Guidelines

The transmit path requires attention from a driver writer to keep machine performance from being affected under heavy load. To avoid problems, follow these guidelines:

- Queue only when necessary.
- Keep packets in order when queuing.
- More guidelines.

<Head2>Receive Optimization Guidelines

Receive is the most difficult path to tune because many factors are outside the driver’s control. For example, packet size and arrival are determined by the remote machine, and the behavior of the protocol stack plays a much greater role than it does on transmit. Follow these guidelines:

EXAMPLE 3-2 Organizing an Online Document by Inverted Pyramid *(Continued)*

- Copy small packets.
- If you must drop a packet, do not tail drop.
- More guidelines.

Organize by Table

Tables are an effective way to compare facts and enhance reader comprehension. However, tables with many rows and columns can be difficult to read and display online. Make online tables short and simple to improve online readability and reduce load time.

If readers are likely to print a table for future reference, make sure that the table does not run off a printed page.

To simplify tables, follow these guidelines:

- **Limit the number of columns and rows so that the entire table can fit inside a typical web browser.**

For example, you can divide long, wide tables into several short tables.

- **Use few words within table cells.**

Use phrases rather than sentences to eliminate unnecessary text. Use abbreviations as necessary. However, do not omit articles where they are needed.

- **Consider using a table instead of a bulleted list for long lists with repeating elements.**

When formatting tables, leave room for the expansion that can occur during translation. For more guidelines on constructing tables, see “Tables” on page 29.

In this example, the table helps readers make decisions about tasks that they need to perform and provides links to additional information.

EXAMPLE 3-3 Organizing an Online Document by Table

Installation Status	Procedure	For More Information
Before Solaris software is installed	<ol style="list-style-type: none"> 1. Deselect the <code>SUNWsregu</code> package (interactive installation). 2. Create and run a <code>finish</code> script that creates a file named <code>solregis</code>. 	<i>__Solaris 8 Advanced Installation Guide__</i>

EXAMPLE 3-3 Organizing an Online Document by Table *(Continued)*

Installation Status	Procedure	For More Information
After Solaris software is installed	<ol style="list-style-type: none"> 1. Use the <code>pkgrm</code> command to remove the <code>SUNWsregu</code> package. 2. Add the <code>solregis</code> file in the <code>/etc/default</code> directory (custom JumpStart installation only). 	__Chapter 21, Software Administration (Tasks)__ __Solaris 8 Advanced Installation Guide__ __solregis(1)__

Organize by Flow Diagram

Use clickable flow diagrams to direct readers through related topics. For instance, you can use flow diagrams to lead readers through a complex task consisting of multiple procedures. Links can take readers to step-by-step instructions for each procedure.

If the product you are documenting lends itself to a high-level overview, you can use a flow diagram to show how groups of procedures are related. This strategy can help give readers the “big picture” of the product.

When formatting flow diagrams, leave room for expansion that can occur during translation.

Note – Create clickable flow diagrams only if the complexity of your material makes the effort worthwhile, and if doing so is feasible with your authoring tool. Contact your illustrator or production staff for help.

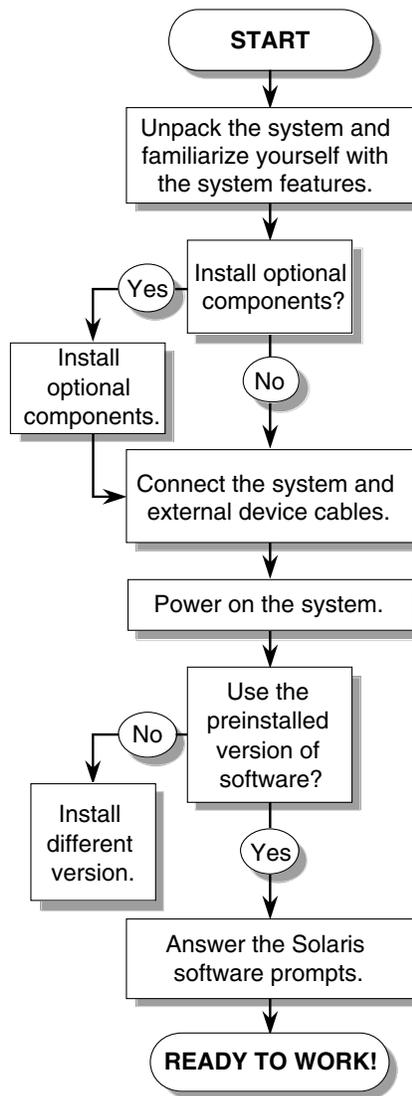
In the following example, a clickable flow diagram with four links helps users troubleshoot the JavaStation™ appliance in reference to the OpenBoot™ PROM report.

EXAMPLE 3-4 Organizing an Online Document by Clickable Flow Diagram

Hold down the F7 key
for 10 seconds while
powering on the
appliance.

|

EXAMPLE 3-5 Organizing a Complex Task by Flow Diagram



- See [_Unpacking the System_](#).
- See [_Front Panel Overview_](#).
- See [_Back Panel Overview_](#).
- See [_Installing Optional Hardware_](#).
- See [_Cabling the System_](#).
- See [_Powering On the System_](#).
- See the documentation in your version's *Solaris Media Kit* for instructions.
- See [_Setting Up Your Operating Environment_](#).
- See [_Getting Started With the Additional Preinstalled Software_](#).

Organize by Task Map

Task maps organize task-based information for users who need fast access to procedures. You can organize individual tasks into a task map that lists either of the following:

- Required, sequential procedures related to a complicated task
- Optional procedures related to a particular topic, such as “Maintaining a Printer”

Links to each procedure create a clickable task map. A link to overview information directly before or after each task map enables readers to view overview material only if they want to do so.

A task analysis can help you determine which tasks are best grouped. Ideally, include on your analysis team users who perform these tasks.

See also [“Using Task Maps to Organize Tasks” on page 108](#).

The following task map provides links to procedures and high-level descriptions for quick reference. Tasks are numbered because they must be performed in sequential order. Note the link to overview information that follows this task map.

EXAMPLE 3-6 Organizing Online Tasks With a Task Map

Task	Description
1. __How to Configure a File System for Quotas__	Edit the <code>/etc/vfstab</code> file to activate quotas each time the file system is mounted. Then, create a quotas file.
2. __How to Set Up Quotas for a User__	Use the <code>edquota</code> command to create disk quotas and inode quotas for a single-user account.
3. (Optional) __How to Set Up Quotas for Multiple Users__	Use the <code>edquota</code> command to apply prototype quotas to other user accounts.

For an overview of managing quotas tasks, see [__Managing Quotas \(Overview\)__](#).

Writing Short, Self-Contained Topics

Write topics that minimize screen readability problems and that help readers find needed information quickly. Follow these guidelines:

- **Divide text into self-contained, linked topics.**
- **Keep topics short.**

Online topics can be quite short. However, just one or two short sentences probably do not justify splitting off the text into a separate topic.
- **Focus on the structure of content, not on how formatting renders online.**
- **Include transitions within each topic.**

Note – The four preceding bulleted items appear in bold because one of the items contains explanatory text.

Divide Text Into Self-Contained, Linked Topics

Divide each document into self-contained, linked topics. Ideally, each topic explains its content without making assumptions about previous topics. Links to overviews or other explanatory information can help readers who need more background.

To determine how much information to put in a topic, consider the complexity of the information and your audience's knowledge and experience.

Make each topic clearly focused and coherent so that it answers one question about one subject for one purpose. Try writing a single question that the topic is meant to answer. Then, judge whether the content in that topic fully answers that question.

Also, repeat contextual information within each topic when needed. Contextual information helps orient readers so that they know what the current topic is and how it fits within the larger document structure. See [“Preserving Context in Online Documents”](#) on page 85.

Focus on the Structure of Content

Short topics and the frequent use of subheadings might at first appear undesirable from a visual design standpoint, depending on the display tool and the reader's browser preferences. If the document is single-sourced and also delivered in print, so many subheadings might appear cluttered on the printed page.

However, many subheadings make text more scannable for readers scrolling through a document. Subheadings also help readers more easily locate specific information in a clickable table of contents. Instead of being concerned about how the formatting is rendered in print and online, focus on the structure of the content. Divide text into short, self-contained topics. Then, label the topics with meaningful headings and subheadings.

Include Transitions Within Each Topic

Use transitions between and within paragraphs to show how ideas relate to each other. Some experts argue that transitional phrases and sentences in online documents add clutter and slow down the reader. However, these techniques make the text flow better so it can be more easily understood.

This guideline does not apply to introductory sentences or paragraphs that repeat the content in headings. This type of transitional text is redundant in online documents that have meaningful, scannable headings.

The text in the incorrect example lacks transitions and unnecessarily repeats the content in the heading. The text in the correct example includes transitional words and phrases, which are shown in bold. Also, the introductory sentence is no longer redundant.

EXAMPLE 3-7 Including Transitions Within Each Topic

Incorrect:

<Head2>How the Trusted Solaris Environment Protects Against Intruders

The Trusted Solaris™ environment protects against intruders by providing accounts that require user names with passwords. They can be created by users or be system-generated, according to your site's security policy. You can require that passwords be changed regularly.

Users can work within their approved label range only, which limits the information they can access. Additional passwords are required for certain administrative tasks. This limits the damage that can be done by an intruder who guesses the superuser password.

Correct:

<Head2>How the Trusted Solaris Environment Protects Against Intruders

Trusted Solaris™ protection includes accounts that require user names with passwords. **Passwords** can be created by users or can be system-generated, according to your site's security policy. You can **also** require that passwords be changed regularly.

In addition, users can work within their approved label range only, which limits the information they can access. Additional passwords are required for certain administrative tasks. **This requirement** limits the damage that can be done by an intruder who guesses the superuser password.

Constructing Scannable Paragraphs, Headings, and Lists

Readers expect online text to be succinct and directly relevant. They are also goal oriented and scan for information rather than read long blocks of text thoroughly. Make online documents scannable to help readers locate information quickly.

To construct scannable paragraphs, headings, and lists, do the following:

- **Write clearly and simply.**
- **Keep paragraphs short.**
- **Condense text.**

Write concisely and eliminate unnecessary material. However, be cautious about condensing text too much. See [“Be Careful When Condensing Text”](#) on page 81.
- **Use links to make text seem shorter.**

Text seems shorter because readers use links to select only the topics of interest. See [“Use Links to Make Text Seem Shorter”](#) on page 97.
- **Replace text with tables, charts, and figures, when possible.**
- **Write meaningful headings and subheadings.**
- **Use bulleted lists and jump lists.**
- **Emphasize key words and phrases in bold.**

Write Clearly and Simply

Short, uncomplicated sentences are especially important online because reading text on a screen is slower than reading printed text. To present information clearly and simply, follow these guidelines:

- **Use simple declarative and imperative sentence structures.**
- **Use active voice, present tense, and concrete, meaningful words.**

For suggestions on improving your technical writing style, see [Chapter 2](#).
- **Use terms consistently.**

When you use terms consistently, readers do not have to recheck different topics to grasp the meaning of the material.

EXAMPLE 3-8 Writing Clearly and Simply

Incorrect:

It is recommended that virtual memory limits be set high so that these limits can never be reached under normal operating circumstances. However, the virtual memory limit can also be used to place a limit over the entire database server in

EXAMPLE 3-8 Writing Clearly and Simply *(Continued)*

order to stop a failing database with a memory leak from spilling over to other databases or workloads on the system.

Correct:

Set virtual limits high so that they are never reached under normal circumstances. However, you can use the virtual memory limit to place a limit over the entire database server. This strategy prevents a database with a memory leak from affecting other databases or workloads on the system.

Keep Paragraphs Short

Short paragraphs offer visual breaks and are easier to scan and read online. To keep paragraphs short, follow these guidelines:

- **Limit each paragraph to one idea.**
- **Make the topic sentence the first sentence in each paragraph.**
- **Emphasize main points.**
Set off each main point in its own sentence or short paragraph. Alternatively, use bold for emphasis. See “[Emphasize Key Words and Phrases in Bold](#)” on page 83.
- **Keep paragraphs from three to five sentences long.**
- **Limit paragraphs to 75 words or fewer.**

Note – The five preceding bulleted items appear in bold because one of the items contains explanatory text.

EXAMPLE 3-9 Keeping Paragraphs Short

Incorrect:

There are two methods for setting device attributes. The first method is to call the `xil_device_create(3)` and `xil_device_set_value(3)` functions before creating the device image with the `xil_create_from_device(3)` function. The second method is to call `xil_device_set_value(3)` after calling `xil_create_from_device(3)`. Certain attributes require that they be set with the first method (such as `DEVICE_NAME`) and are documented as such in the following sections.

Correct:

You can use one of these methods to set device attributes:

- Call the `xil_device_create(3)` and `xil_device_set_value(3)` functions before creating the device image with `xil_create_from_device(3)`
- Call `xil_device_set_value(3)` after calling `xil_create_from_device(3)`

EXAMPLE 3-9 Keeping Paragraphs Short *(Continued)*

Certain attributes, such as `DEVICE_NAME`, must be set with the first method. `__Device Attribute Descriptions__` documents these attributes.

Eliminate Unnecessary Material

To determine what material is unnecessary, you need to know not only what readers need, but what they do not need. To reduce word count, follow these guidelines:

- **Do not include unnecessary definitions and explanations, or information that is too technical for readers' needs.**

For example, do not give UNIX security administrators a table of frequently used UNIX commands.

Also, consider creating a glossary for your document. A glossary condenses text by moving definitions out of the main text.

- **Eliminate "nice to know" or overly detailed information.**
- **Avoid flowery language such as "great" and "amazing," buzzwords, and unsupported claims.**
- **Eliminate introductory text that repeats the content in the headings.**
- **Avoid writing introductions to figures or tables that repeat the figure or table caption.**

In this example of text that introduces a figure, the figure caption reads as follows: "Figure 8-4 Work Item Statistics Page."

Incorrect:

When you click the Statistics tab and then the Find Statistics on Work Items link, the Work Item Statistics page is displayed. Use this page to request a statistics report for all work items for one or all applications that are initiated or modified within a given time period. The following figure shows the Work Item Statistics page.

Correct:

When you click the Statistics tab and then the Find Statistics on Work Items link, the Work Item Statistics page is displayed, as shown in Figure 8-4. Use this page to request a statistics report for all work items for one or all applications that are initiated or modified within a given time period.

- **Omit redundant figure callouts.**
Eliminate callouts for buttons or other screen features that already have a self-explanatory name. For example, you probably do not need a callout for the Delete or Copy button.
- **Do not duplicate instructions on how to use a graphical user interface (GUI).**
If the instructions are available in online help, do not repeat them in other online technical documentation.

For guidelines on writing GUI instructions, see [Broken Link \(Target ID: SGGUI-31861\)](#). See also [“Use One Method to Describe a Single Procedure”](#) on page 114.

- **If possible, perform informal usability testing to see how readers use the online document and whether you can eliminate certain types of content.**

If you have control over document navigation, also perform usability testing to improve its design. A good design helps you avoid wasting time and words writing text that attempts to resolve navigational flaws.

Be Careful When Condensing Text

Do not make text so short that it seems “dumbed down,” choppy, abrupt, confusing, or incomplete. You do not want to sacrifice content, readability, quality, tone, or flow.

Most importantly, do not remove content that readers need to complete necessary tasks. Also, if topics can be read in any order, you might need to link to or repeat some information to provide sufficient context for readers. See [“Preserving Context in Online Documents”](#) on page 85.

Remember that online writing does not always have to be short. Drastically condensing text can disappoint readers who are seeking very detailed information online. Readers prefer documents that fully answer their questions on a topic. For in-depth answers, readers are likely to print the document anyway.

Write Meaningful Headings and Subheadings

Write headings and subheadings as short, precise abstracts of their associated content. Headings are often displayed out of context in a search results list or bookmark menu. Sometimes only the first few words are displayed, or the words in the middle of the heading are truncated and replaced with ellipsis points.

Even when headings are displayed with their associated content, the small amount of information visible on a computer screen is difficult to interpret at a glance.

To construct scannable headings, follow the guidelines in [“Headings”](#) on page 19.

Use Bulleted Lists

Bulleted lists are ideal for online documents because they emphasize information in a concise format that encourages scanning. Key facts within list items are easy to identify. Bulleted lists also help break up hard-to-read screen text and provide white space that gives the eyes a visual break.

To facilitate scanning, follow these guidelines:

- **Use bulleted lists to break up long paragraphs.**
- **Use more lists online than you would on a typical printed page.**
- **Avoid having more than nine items in a list.**

If a list has more than nine items that can be logically broken up, divide the list into two or more lists.

- **Use concise phrases.**

Concise phrases are easier to scan than complete sentences. Also, lines are less likely to wrap in a browser window when you use phrases.

- **Write the first sentence as a concise summary if a list item consists of two or more sentences.**

Provide explanatory information in a new paragraph, as shown here.

For more guidelines on constructing lists, see [“Lists” on page 22](#).

EXAMPLE 3-10 Using a Bulleted List

Incorrect:

You must choose a user name for each user account that you create. User names must be unique within your organization, which could span multiple domains. They must also contain from two to eight letters and numerals. (The first character must be a letter and at least one character must be a lowercase letter.) Lastly, they cannot contain an underscore or a space.

Correct:

You must choose a user name for each user account that you create. User names must adhere to the following criteria:

- They must be unique within your organization, which could span multiple domains.
- They must contain from two to eight letters and numerals.
The first character must be a letter. At least one letter must be lowercase.
- They cannot contain an underscore or a space.

Use Jump Lists

A jump list provides a clickable list of topics that helps readers scan and navigate in an online document. Use a jump list so that readers can easily scan and link to the following:

- The contents within a chapter or section
- All procedures, including those that are part of a long, complex task
- A list of related topics that are typically cross-referenced in print documents

When you create a jump list, consider briefly explaining the content of each list item so that readers can decide which links to traverse. Annotating links is not necessary if the link text clearly describes the link destination.

For more guidelines on constructing jump lists, see “Writing Jump Lists” on page 28.

EXAMPLE 3-11 Using a Jump List

You can perform the following optional procedures to maintain user and group accounts:

- [__Modifying a Group__](#)
- [__Deleting a Group__](#)
- [__Disabling a User Account__](#)

EXAMPLE 3-12 Using a Jump List With Annotations

This chapter explains the proper design and building of a computer room.

- For recommendations about flexibility and planned redundancy, expansion, room layout and planning, and access issues, see [__Designing the Room__](#).
- For recommendations about floor height, support grids, tile construction, load and fire ratings, and supplemental bracing, see [__Designing the Floor__](#).
- For recommendations about preparation and materials selection, see [__Building the Room__](#).

Emphasize Key Words and Phrases in Bold

To help readers pick out key concepts and paragraphs of interest, use bold to emphasize important words.

Important words are key words and phrases that succinctly state the subject of a given paragraph or section. By scanning all the bold text online, readers can quickly understand the scope of its content.

Using bold for key words and phrases is most appropriate for narrative text, such as conceptual information, and to emphasize key information in bulleted lists.

To emphasize key words and phrases, follow these guidelines:

- **Use emphasis cautiously.**
To emphasize key information, first structure the online text into short topics. Then, write meaningful subheadings for each topic. Use emphasis only when defining more headings and subheadings does not suit a particular situation.
- **Use bold for emphasis.**
Do not use italic for emphasis because italic type is hard to read online. Do not use color for emphasis because color is typically used to designate links.

Note – In some single-source authoring environments, emphasized text is shown in italic in print but displayed in bold online.

- **Emphasize key, informative words.**

When possible, emphasize just a few words because the scanning eye notices only two or three words at a time. However, you can emphasize a long phrase or sentence if it completes the main idea.

You can emphasize the same key words multiple times in different places.

Incorrect: Indexes with links are now available for some online documents.

Correct: Indexes with links are now available for some online documents.

- **Avoid emphasizing words in every paragraph.**

Besides diminishing the purpose of making important words stand out, too much emphasized text can annoy and distract readers.

- **Create context-rich link text.**

Do not use bold for links, which often stand out by being in color and underlined. For tips on creating links that provide sufficient context, see [Chapter 4](#).

- **Emphasize the entire lead sentence after each bullet if most items in the bulleted list contain explanatory text.**

Then, place the explanatory information in the paragraph that follows the lead sentence.

Incorrect:

- **Limit the number of graphics per page** because many graphics take longer to load.

Correct:

- **Limit the number of graphics per page.**

Many graphics can take a while to load, so use them only when necessary.

- **Do not use bold to emphasize the main point in each bullet if items in the bulleted list do not contain explanatory text.**

The bullets alone are often sufficient. Too much bold is distracting.

Incorrect:

Reduce word count by eliminating the following:

- **“Nice-to-know” information that is merely potentially useful or interesting**
- **Overly detailed information that readers are likely to skip**
- **Unnecessary adjectives such as “great” and “amazing”**

Correct:

Reduce word count by eliminating the following:

- “Nice-to-know” information that is merely potentially useful or interesting
- Overly detailed information that readers are likely to skip
- Unnecessary adjectives such as “great” and “amazing”

Note – Another option for bulleted lists: You can use bold to emphasize a summary word or phrase, followed by an en dash or period. For an example of this strategy, see “Writing Bulleted Lists” on page 26.

For other typographic conventions used in documentation, see [Broken Link \(Target ID: SGCONSTR-10765\)](#).

Preserving Context in Online Documents

Online readers create their own transitions as they move through a document. Through traversing links, both associative and navigational, readers choose their own path by deciding where to go next.

This freedom to jump around online has a down side. Sometimes, context is lost and readers can become confused or disoriented. To preserve context, online documents must support nonlinear and incomplete reading. Follow these guidelines:

- **Make few assumptions about reading order.**
- **Offer contextual cues.**
- **Give the precise location of related information.**
- **Use pronouns carefully.**

The antecedents of “this” and “it” are often unclear, especially online. Pronouns that are too vague also cause problems for translators.

Note – The four preceding bulleted items appear in bold because one of the items contains explanatory text.

Make Few Assumptions About Reading Order

In an online environment, you usually do not know how readers come to your document or a section of it. They might arrive through a table of contents or a search engine. They might click a cross-reference that leads them there. They could just be scanning links.

When you make few assumptions about reading order, you are better prepared to offer readers the necessary contextual cues.

Offer Contextual Cues

Contextual cues help readers understand where the information belongs within the larger structure of the document.

If you do not provide sufficient context, readers have to figure out how the sections are related. You need to help readers make these associations meaningful. For example, you could indicate to readers that a certain topic is part of a broader topic.

For instance, to indicate that information under a third-level heading is a subtopic of a second-level heading, you could write the subtopic heading to reflect this relationship. Or, you could include introductory text to this effect.

If sequential order is important, give readers a sense of what comes before and after a topic. For example, if a complex task is logically divided into several short subtasks or procedures, tell readers what comes before and after each procedure. A list of prerequisites before a procedure and a “Where to Go From Here” section after a procedure would suffice here.

Give the Precise Location of Related Information

The words “above” or “below” have no meaning in a document that is not read linearly. Instead, use one of these strategies:

- **Use “next,” “following,” or “previous” if the information is contained in the same topic.**
- **Name the item.**
For example, instead of using the text “in the following section,” you can name the section by using the text “Modifying a Group.”
- **Link to the information.**

Note – The three preceding bulleted items appear in bold because one of the items contains explanatory text.

EXAMPLE 3-13 Preserving Context in Online Documents

Incorrect:

<Head2>Demo Programs

You can find demo programs in `/usr/dt/examples/dtbuilder`. See the README file for detailed information about them.

EXAMPLE 3-13 Preserving Context in Online Documents *(Continued)*

<Head2>Related Documentation

For more information about this, see the App Builder help volume and the *__Common Desktop Environment: Application Builder User's Guide__*.

Correct:

Previous Topic: Developing an Application

<Head2>Application Builder Demo Programs

You can find the Application Builder demo programs in the `/usr/dt/examples/dtbuilder` directory. See the README file for detailed information about these programs.

<Head2>Application Builder Documentation

For more information about Application Builder, see the Application Builder help volume and the *__Common Desktop Environment: Application Builder User's Guide__*.

Next Topic: Designing and Maintaining Portable Applications

Note – Explicitly state Previous Topic and Next Topic only if your document display tool does not automatically generate this information.

alpha Composed November 11, 2005

Constructing Links

A link consists of the **link text** and the **link destination**.

Note – Depending on your writing tool, you might be unable to implement some guidelines in this chapter.

This chapter discusses the following topics:

- “About These Guidelines” on page 89
- “Why Use Links?” on page 90
- “Where to Place Links” on page 91
- “General Linking Strategies” on page 93
- “Guidelines for Crafting Link Text” on page 99

About These Guidelines

The guidelines in this chapter focus on **online text** that is intended to be read in a web browser, such as technical documentation on the docs.sun.com web site. This chapter does not discuss software tools, web browsers, screen design, graphics, or document delivery methods.

This chapter uses typographic conventions that are optimized for online documents. These conventions might differ from the conventions that are used in the rest of this book. For example, this chapter uses underscores before and after link text to show where to place links in the text. Bold type is used to emphasize most guidelines.

For online help writers, these guidelines serve as a general resource on writing effectively online. For additional guidelines that are specific to online help, see *Writing Help for the Solaris Management Console*. This guide explains how context help and

background help work within the Solaris Management Console applications. The guide discusses what both types of help should contain and how they differ, and provides guidelines on writing consistently. Find this guide online at <http://bigblock.east/~sfordin/autohelp/jetassist.html>.

The online writing guidelines in this chapter do not apply to the following:

- PDF documents
- PostScript documents
- Man pages

This chapter uses the word “page” to refer to an online page or web page. A “page” is equivalent to an online file or web file. When “printed” precedes the word “page,” the reference is to hard copy.

Note – For single-source document writers: If you encounter a conflict between online and print writing guidelines, follow the guidelines for your primary delivery mode.

Why Use Links?

Links enable readers to jump to related information with a single click. Links are one of the advantages of online reading because they enable readers to make their own decisions about how to access information.

However, links pose challenges for writers. Too many links clutter text and can distract readers. Too few links mean readers might have difficulty finding the supplemental information that they need when looking at a screen of text, which lacks the context of a printed page.

Links stand out by virtue of being underlined and displayed in color, so think of them as emphasized words. Because the scanning eye notices only two or three words at a time, emphasized or not, make the link text short but informative. In addition, be sure that the links on a page collectively offer context about what that page contains, not just where each link leads.

Where to Place Links

When considering which links to create, anticipate paths that your readers are likely to take. Which associations would benefit them? Let your readers' needs, expectations, and interests guide you. Create links that support good decision making.

When readers must follow a certain sequence through your content, for example, when following a procedure, limit their choices by reducing or eliminating links. At the least, guide readers with additional explanatory text.

Except for such instances, your goal is to provide readers with opportunities, not to order them around. However, do not make these opportunities endless. You must set priorities in your documents and point your readers in relevant directions.

The following sections suggest ways to use links in online documents.

Tables of Contents

If your writing tool does not generate a clickable table of contents for you, include one as the entry point into your online document. If your writing tool can expand and collapse entries for tables of contents, use this feature.

Summaries

To reduce the amount of information that readers see, briefly summarize content and then link to supporting details. For example, you can link to long examples and to overview, background, reference, detailed, or supplementary information.

If you organize your document by hierarchy, you can present general overviews that link to increasing levels of details. See [“Organize by Hierarchy”](#) on page 69.

You can also use summaries in white papers by dividing the white paper into short, self-contained topics, and then linking the topics together. In the introduction, include a short narrative summary and a jump list that links to the rest of the paper.

Lists

Online readers interpret links more easily in bulleted lists rather than links embedded in paragraphs. A jump list can serve as a short table of contents or a brief summary of the content if it is placed at the beginning of a chapter or main section of a document.

For more information, see [“Use Jump Lists”](#) on page 82 and [“Provide Links in a List”](#) on page 98.

Tables

Tables with links to related information provide scannable content and quick access to more details. See [“Organize by Table” on page 71](#) and [“Tables” on page 29](#).

Cross-References

Cross-references to other sections, chapters, or manuals typically become links embedded in the text. Consider clustering cross-references to headings or titles under a [“See Also,” “Related Topics,”](#) or similar heading.

Capitalize and punctuate cross-references by following the rules in [“Formatting Cross-References” on page 37](#).

Man Pages

Links to man pages give readers direct access to information about SunOS™ software commands and functions. For the first reference to a command or file in a procedure, include the man page section and a link to the man page. If you reference the same command or file again in the same procedure, use the command name or file name, but do not include the man page section. Also, do not include another link to the man page, unless doing so in a particular context helps readers.

Code Examples

Consider placing long blocks of programming code in a separate text file. Then, link to the text file from your document. This strategy eliminates the formatting cleanup that is often necessary when a user cuts and pastes code from documents displayed in a web browser.

Glossary Terms

Wherever the prominent use of a glossary term appears, link to the document’s glossary if the document has one. If your document does not have a glossary, include a link to the *OpenSolaris Glossary*, if possible.

In determining the prominent use of the term, consider the reader’s likely path through the document. Remember that too many links can distract readers. Balance the desire to provide helpful links to the glossary against the risk of overlinking.

Reader Comments

Include an online feedback mechanism on every page of your online document if you have control over this information design feature. Direct comments to the appropriate group, not, for instance, to the webmaster if your document is displayed on the web. Also, let users know if they should expect a response to their comments.

Reference Lists

A document such as a white paper can link to a reference list that is contained in a separate page. In print, the reference list would be contained within the body of the paper.

Other Relevant Web Sites

For web documents, links to material on other sites enable you to take advantage of what others have produced. For information about linking to third-party web sites, see [Broken Link \(Target ID: SGLEGAL-41\)](#).

General Linking Strategies

When constructing links, use these general strategies:

- **Create links that anticipate readers' likely paths.**
See "Where to Place Links" on page 91.
- **Avoid overlinking.**
- **Prevent reader disorientation.**
- **Include links that answer readers' questions.**
- **Use links to condense the amount of information readers see.**
- **Provide links in a list when possible.**
- **Place links at the end of a topic when possible.**
- **Provide URLs only when needed.**
- **Test the validity of links.**

Avoid Overlinking

Be careful about filling text with distracting links. Too many links dilute the message on a page and can confuse readers with irrelevant digressions. You need to guide readers and filter their choices.

Links also disrupt the narrative flow of text by inviting readers to go elsewhere. Unless that is your goal, link sparingly. Also, remember that too many links can involve too much maintenance and that they are hard to read on a cluttered screen.

The following sections suggest ways to avoid overlinking.

Avoid Interrupting Readers

If you do not want to interrupt the reader at a certain point in the text, do not put a link there. Ask yourself: Is the information at the link destination relevant to the audience, purpose, and content of this document?

Do Not Link the Same Text Repeatedly

- **Do not repeat a link wherever the link text occurs.**

Identifying a link once per topic is sufficient.

Incorrect:

Solaris Volume Manager uses __virtual disks__ to manage physical disks. In Solaris Volume Manager, a __virtual disk__ is called a volume.

Correct:

Solaris Volume Manager uses __virtual disks__ to manage physical disks. In Solaris Volume Manager, a virtual disk is called a volume.

- **Do not link to an online feedback mechanism more than once on a page.**
- **Avoid making explicit cross-references if they create redundancy.**

Incorrect:

If you used __Wrap To Fit__, the Save dialog box includes an additional choice about handling line endings (see __Wrap To Fit__).

Correct:

If you used __Wrap To Fit__, the Save dialog box includes an additional choice about handling line endings.

Note – If you are generating a printed and an online version of your document from the same source, you might need to make explicit cross-references to accommodate the requirements of the printed version.

Minimize the Number of Clicks

Do not add a link if you can succinctly present the information in the current topic.

In the following incorrect example, readers need to click twice to access the *Common Desktop Environment: Application Builder User's Guide*. The first click, [__click here__](#), takes readers to the list of related documentation. The second click, which is not shown in the example, takes readers to the user's guide. In the correct example, readers need to click only once to access the user's guide.

Incorrect:

For related documentation on Application Builder, [__click here__](#).

Correct:

For related documentation on Application Builder, see the appropriate man pages, the Application Builder help volume, and the [__Common Desktop Environment: Application Builder User's Guide__](#).

Limit Internal Linking

■ **Especially if a page is short, do not link to other destinations on that page.**

Readers typically expect links to take them to another page. If a link takes readers only a few lines down, readers can become disoriented.

■ **When a table, figure, or example immediately follows a textual reference to it, do not include a link.**

The unnecessary link can disorient and frustrate readers, especially if clicking on the link renders an entirely new web browser that contains only that structure.

In the textual reference to the table, figure, or example, use the word "following" to indicate the structure's location. For example, you might begin the sentence with the text "The following figure shows."

Prevent Reader Disorientation

Ensure that readers remain fully oriented and in control as they navigate through an online document. Readers are properly oriented when they can identify the content presented, the location of the content within the larger body of information, and the navigational options.

Some techniques to prevent disorientation include the following:

- **Reserve link formatting for links only.**

Never use your link formatting convention for any other purpose. Links are usually identified by underlining and a certain color.

- **Label navigational icons.**

Label navigational icons if you have such control over them. Some users are visually oriented while others are text oriented. A combination serves all users.

- **Provide sufficient context.**

Sufficient context helps readers decide whether to follow the link. Explain what information is located at the link destination and how it relates to the present topic. See [“Provide Context in Link Text and Surrounding Text”](#) on page 99.

- **Warn readers about unexpected link destinations.**

Let readers know when a link might take them to an unexpected destination. For example, tell readers when clicking on a link does the following:

- Opens another document
- Opens another application
- Takes them to another site
- Leads to a large file with a long download time
- Requires them to register or enter a password to access the destination

If you carefully word a link and its surrounding text, readers know when the link takes them away from your document.

In the following example, links to “VI” and “Emacs” take readers away from the Java tutorial. The correct version clearly indicates that clicking on either link takes readers to another site.

EXAMPLE 4-1 Preventing Reader Disorientation

Incorrect:

Pico is probably the easiest of the three editors to use. If you are curious about how to use the other editors, however, see the reference cards for [__VI__](#) and [__Emacs__](#).

Correct:

Pico is probably the easiest of the three editors to use. If you are curious about how to use the other editors, however, see their reference cards:

- [__VI Reference Card__](#) from Dalhousie University
- [__GNU Emacs Reference Card__](#) from [www.geek-girl.com](#)

Include Links That Answer the Reader’s Questions

One reason for providing links is to answer the reader’s questions, such as “How do I compress a file?” Ideally, write link text so that it corresponds to the reader’s search tasks.

Incorrect:

Bug voting provides another channel for feedback and for establishing priorities. You can cast a vote on the bugs that frustrate you the most. Your votes are viewed by engineering. If you want to vote, [click here](#).

Correct:

Bug voting provides another channel for feedback and for establishing priorities. You can cast a vote on the bugs that frustrate you the most. Your votes are viewed by engineering.

Use Links to Make Text Seem Shorter

Your online document might be lengthy. However, with links, your text can appear shorter to readers without sacrificing depth of content.

- **Link to in-depth information.**

Use summaries and link to supporting details. See [“Summaries” on page 91](#).

- **Link to, rather than duplicate, information.**

For example, if a procedure is basic and frequently used as part of other more complex procedures, do not repeat the steps of that basic procedure. Instead, put the steps for the basic procedure in one section and link to it from other places.

Also, do not duplicate background or overview information. Include this material in one place and link to it from other places, as needed.

- **Link to basic information.**

Link to basics so expert users do not stop reading. Novice users can access the material if they are interested.

Note – Avoid dividing long, linear text into multiple pages with Next links, which is known as “electronic page turning.” If this method seems like the only way to present the material, consider providing a printer-friendly version for offline reading or a PDF file that readers can download.

Provide Links in a List

- **Try to use a list of links instead of links embedded in the text.**

Searching a list of links rather than a paragraph with embedded links reduces the mental processing demands of online reading and link interpretation.

Incorrect:

The installation of the application server is affected by the following resource issues: [__unique network ports__](#), [__shared directory configuration trees__](#), [__shared Java environment__](#), and [__login__](#).

Correct:

The installation of the application server is affected by the following resource issues:

- [__Unique network ports__](#)
- [__Shared directory configuration trees__](#)
- [__Shared Java environment__](#)
- [__Login__](#)

- **Carefully craft the link text, and annotate each link, when necessary, to ensure that readers can easily decide which links to follow.**

Place Links at the End of a Topic

To encourage readers to stay with a topic, place links at the end of a topic, when possible. Readers might read all or at least some of the content before moving on.

In the following incorrect example, the link text falls in the middle of the paragraph. In the correct example, the link text falls at the end of the topic.

Incorrect:

You can install the application server by using `setup.exe` or `ezSetup.exe`. The `ezSetup` method provides an easy installation without requiring various inputs. For more information, see [__Using ezSetup__](#). However, this section covers the `setup.exe` installation options: Express, Typical, and Custom installations. The Typical option is the default.

Correct:

You can install the application server by using `setup.exe` or `ezSetup.exe`. This section covers the `setup.exe` installation options: Express, Typical, and Custom installations. The Typical option is the default.

For an installation that does not require various inputs, use the [__ezSetup method__](#).

Provide URLs Only When Needed

Use URLs in the following instances:

- **When readers are likely to print the page and then later retype a URL on that page in a web browser**
- **When your online document is also available in print**
- **When your goal is to raise awareness of a site**

Reserve this usage for short URLs only, such as the docs.sun.com URL, because readers are unlikely to remember long URLs.

Make references to URLs as simple and as direct as possible. For suggestions on how to introduce URLs in text, see [Broken Link \(Target ID: SGGUI-39\)](#).

Test the Validity of Links

Testing the validity of links ensures that links in your document lead where they promise. Test the validity of internal links and external links.

Guidelines for Crafting Link Text

When crafting link text, follow these guidelines:

- [Provide context](#) in link text and surrounding text.
- [Weave link text into sentence structure](#).
- [Choose key words or phrases](#) for link text.
- [Choose an appropriate length](#) for link text.
- [Write scannable link text](#).
- Make link text [conceptually similar](#) to titles or headings of link destinations.
- [Do not use quotation marks](#) around link text.

Provide Context in Link Text and Surrounding Text

Readers use links as guideposts when scanning, so take full advantage of them and word your link text accordingly. Effective link text also creates adequate context for readers and reduces the likelihood of readers becoming disoriented.

- **Choose your link text carefully, as well as the text that surrounds the link text.**

- **If possible, supply explanatory text before the descriptive link.**

This additional information helps readers understand where each link leads and why it was chosen.

Incorrect:

[__Appendix F__](#) identifies the system components.

Correct:

For a list of the Sun Enterprise™ 3500 system components, see [__Appendix F, Illustrated Parts Breakdown__](#).

Incorrect:

The combination of hypertext and the global Internet started a revolution. In [__this article__](#), published in *Scientific American*, Jon Bosak and Tim Bray tell how a new tool, XML, is poised to finish the job.

Correct:

The combination of hypertext and the global Internet started a revolution. Jon Bosak and Tim Bray tell how a new tool, XML, is poised to finish the job. See the *Scientific American* article, [__XML and the Second-Generation Web__](#).

Weave Link Text Into Sentence Structure

Note – Using a list of links is almost always preferable to embedding links in the text. Placing links at the end of a topic is also preferable.

- **Make the text of the link meaningful and part of the natural syntax of the sentence.**
- **Do not make the link text refer to the mechanism of the online display tool, as in “click here” or “go here.”**

One exception is when readers need to see the URL of a web document. See [“Provide URLs Only When Needed” on page 99](#).

Incorrect: [__Click here__](#) for more information about Solstice™ Messaging Manager.

Correct: For more information, see [__Solstice Messaging Manager__](#).

Choose Key Words or Phrases for Link Text

Choose key words or phrases in text that best represent the content of the destination.

Incorrect:

1. [__How do you__](#) set Netscape™ Messenger to use the POP protocol?

2. [__What are__ known problems with the Netscape Communicator for Solaris product?](#)
3. [__Netscape Communicator 4.x Frequently Asked Questions__](#)

In the correct example, the wording of the third question in this example has changed. The reworded text removes the long, unbroken line of link text and presents two different link destinations. Readers now have two link choices instead of one.

Correct:

1. How do you [__set Netscape™ Messenger to use the POP protocol__?](#)
2. What are known [__problems with the Netscape Communicator__](#) for Solaris product?
3. [__Netscape Communicator 4.x Frequently Asked Questions__](#) from Netscape's site [_help.netscape.com_](#)

Choose an Appropriate Length for Link Text

A link that is the length of a complete sentence is too long and difficult to read. One to three words usually works best, as long as those words are context-rich. Using more words is acceptable if they provide helpful context.

Incorrect:

Java 2 SDK, SE v1.2:

- [__Java 2 SDK, SE v1.2 documentation \(Download\)__](#)
- [__Java 2 SDK, SE v1.2 API documentation \(Download\)__](#)
- [__Java 2 SDK, SE v1.2 code examples \(Download\)__](#)

Correct:

For Java 2 SDK, SE v1.2, you can download the following information:

- [__Documentation__](#)
- [__API documentation__](#)
- [__Code examples__](#)

Write Scannable Link Text

Write links as though your reader were scanning only the links on the page. As the eye processes a page, it jumps to the links, so make them self-explanatory and scannable.

Incorrect:

There will be a moderated online chat on the Java API for XML Parsing (JAXP) on Tuesday, April 25, at 11:00 a.m. Pacific Daylight Time. To join the chat, go [__here__](#).

Correct:

Join the __online chat__ on **Java API for XML Parsing (JAXP)** on Tuesday, April 25, at 11:00 a.m. Pacific Daylight Time.

The guests are as follows:

Make Link Text Conceptually Similar to Titles or Headings

Check that the text of all or most of the links in a topic are conceptually similar to the title or headings of their associated link destination.

Also, use consistent wording for link text that leads to the same link destination, if possible. For example, if you have a __Feedback Form__ link at the top of your multipage document, do not use the link text __feedback page__ elsewhere in the same document.

Do Not Use Quotation Marks Around Link Text

Quotation marks around link text unnecessarily clutter the text.

Incorrect: See “_Knowledge Management Center_.”

Correct: See _Knowledge Management Center_.

Writing Tasks, Procedures, and Steps

The purpose of many technical documents is to explain how to use a product to accomplish specific tasks. In such documents, detailed instructions on how to accomplish tasks are often provided in the form of procedures and steps.

For information on writing tasks for architecture-specific information, see [“Guidelines for Documenting Multiple Architectures”](#) on page 147.

This chapter discusses the following topics:

- [“Understanding the Relationship Among Tasks, Procedures, and Steps”](#) on page 104
- [“Developing Task Information”](#) on page 105
- [“Writing Procedures”](#) on page 111
- [“Writing Steps”](#) on page 116

Understanding the Relationship Among Tasks, Procedures, and Steps

This chapter uses these task-related terms as follows:

- **Task.** An overall topic of what specific work is to be done and why the work needs to be done. A task includes instructions for completing the work. A task also can include prerequisites and examples.

A task can be short and simple, even just one action to complete. A task can also be long and complex. A long, complex task might need to be broken up for greater user understanding.

- **Subtask.** A small, short component of a larger task. A subtask might be one action or one set of actions to complete. A subtask can include prerequisites and examples. If a subtask is long and complex, that subtask can also contain subtasks.

To complete a task, a user might need to complete or choose from multiple subtasks. Some subtasks might be *optional* or *conditional*. Such tasks might not always have to be completed, depending on the user's situation or the desired outcome. Make certain that you clearly identify any optional or conditional subtasks as being alternatives.

- **Procedure.** One step or an ordered set of steps that explains how to accomplish a task or subtask. If a task or subtask is not complex, the task or subtask might be just one action.

A procedure can be optional or conditional. A procedure also can include prerequisites and examples.

- **Step.** An instruction that explains how to perform a procedure or part of a procedure. A short, simple procedure might require only one step. Two or more steps are ordered and are numbered to show the sequence of actions.

A step can be optional or conditional. A step also can include prerequisites and examples.

A short task, such as backing up a system, might require performing one simple procedure. In such instances, you might not use all of the guidelines in this chapter.

Developing Task Information

A task is work that needs to be done for a particular purpose. If a task does not correspond to a sequence of steps that are performed in real time, the information can still be presented as task oriented. An application programming interface (API) task is one example of a task that is presented in a way other than as a procedure.

Task orientation is useful for all technologies. Task orientation is as important for a developer's guide as it is for a user's guide or an administrator's guide. When identifying tasks, do not become distracted by the interface. The interface, be it a graphical user interface (GUI), application programming interface, or command-line interface, is how to accomplish the task. The interface is not what needs to be done to accomplish the task.

To develop and write task information, follow these guidelines:

- Perform an audience analysis and a user task analysis.
- Provide only necessary task information.
- Organize related, optional, and conditional tasks.
- Use continuous prose for some tasks.

Perform an Audience Analysis and a User Task Analysis

Before you start writing tasks, identify the audience and perform a user task analysis.

An *audience analysis* identifies the readers and the readers' skills. From the audience analysis, you can determine the amount of detail to provide in the tasks that you write.

Product managers and engineers can tell you who the audience is for a particular document. The audience might be end users, developers, or operators, for example. Subject matter experts can tell you the audience's level of experience and training.

A *user task analysis* identifies all possible uses of a product or products or what a user does with the product. A user task analysis can help you determine whether to write about one task or to divide the task into subtasks. From the user task analysis, you can determine which tasks to break down into subtasks and which tasks to group together. You can also determine whether tasks and subtasks are required, optional, or conditional. Consult with subject matter experts as needed.

Provide Only Necessary Task Information

When writing a task, provide only the information that is necessary to complete the task. In particular, limit any overview information to information without which the user cannot complete the task.

To provide just the relevant information, consider including the following information in a task:

- An explanation of what the task is
- The reasons why readers need to perform the task
- Prerequisites for performing the task
- Instructions on how to perform the task
- Examples that illustrate how to perform the task

For most tasks, the instructions on how to complete the task are in the form of a procedure. For guidelines on how to write procedures, see [“Writing Procedures” on page 111](#).

Some tasks are not suitable for being explained as a procedure. Such tasks might not correspond to a sequence of steps that a user performs in real time. For example, tasks that are associated with an API are not suitable for being explained as a procedure. For examples of writing a task other than as a procedure, see [“Use Continuous Prose for Some Tasks” on page 110](#).

Including Prerequisites

Include any prerequisites that users must consider before users perform a task. The risk of users performing an action out of sequence is particularly high with online documents because users can enter a task from various points.

For a task that is written as continuous prose, place prerequisites in an introductory paragraph.

For a task that is written as procedures, follow these guidelines:

- If users must perform a prerequisite step or procedure, make the first step the prerequisite step or a cross-reference to the prerequisite procedure.
 1. **If the system is not already shut down, type** shutdown.
- If some readers are novice users, include a cross-reference to a basic procedure.
 1. **If a web browser is not already running, start a browser.**
See [“To Start a Web Browser” on page 8](#).

Providing Examples

Consider including one or more examples whenever doing so can help readers. Do not provide an example if the task is self-evident or long and cumbersome.

A command-line example shows the commands and the resulting output. A continuous prose example shows all of the function calls and other code that are required to complete the task.

Note – Most examples in this chapter show command-line information for software procedures.

The tools that you use to author and print a document determine whether code examples are boxed.

When providing an example, follow these guidelines:

- If the example requires clarification, include text with the example.
- Use practical data in the example rather than replaceable or variable text.
- If the caption for an example title contains a verb, begin the caption with the gerund form of the verb.
- Keep the example short, showing only the necessary elements.

If output is lengthy or used only for verification, show just the first lines, last lines, and pertinent intervening lines. Use vertical ellipsis points to indicate any missing lines that readers do not need to see. For example:

```
$ eject -n
.
.
.
rmdisk0 -> /vol/dev/rdisk/c4t0d0/clik40      (Generic USB storage)
cdrom0 -> /vol/dev/rdisk/c0t6d0/audio_cd    (Generic CD device)
zip1 -> /vol/dev/rdisk/c2t0d0/fat32        (USB Zip device)
zip0 -> /vol/dev/rdisk/c1t0d0/zip100       (USB Zip device)
jaz0 -> /vol/dev/rdisk/c3t0d0/jaz1gb       (USB Jaz device)
```

The following example shows how you could provide an example in a procedure.

EXAMPLE 5-1 Installing the Driver Package (Example of Procedure)

After you download the `SUNWdrvrv.tar.Z` package to the `tmp` directory, install the driver:

```
$ cd tmp
$ uncompress SUNWdrvrv.tar.Z
$ tar xf SUNWdrvrv.tar
$ su
Password:
# ./install.drvr
```

Note – Be careful when providing examples of code or screen captures. Make sure that each name that you use for a URL, computer, IP address, and network domain can be made public. See [Broken Link \(Target ID: SGLEGAL-11\)](#) for details.

Organize Related, Optional, and Conditional Tasks

Consider including jump lists, task maps, or flow diagrams in a document to help readers understand the organization of tasks. The tasks can be related, optional, and conditional, as explained here:

- **Jump lists.** Use jump lists if you want to provide cross-references to simple, related tasks.
- **Task maps.** Use task maps if you want to provide a tabular summary of related, optional, and conditional tasks.
- **Flow diagrams.** Use flow diagrams if you want to provide a graphical representation of related, optional, and conditional tasks.

Using Jump Lists to Organize Tasks

A *jump list* is a bulleted list of cross-references that serves as a table of contents for a chapter or section of a document. By using a jump list, readers can quickly go to a particular task within the list of related tasks.

See [“Writing Jump Lists” on page 28](#) for information about constructing a jump list.

Using Task Maps to Organize Tasks

A *task map* organizes tasks in tabular format. A task map lists two or more subtasks that relate to an overall task. A task map also points to instructions for completing those tasks. When writing a task map, do not provide step-by-step instructions.

To create a task map, follow these guidelines:

- Provide a brief introduction to the task map, when appropriate.
You can also cross-reference related overview or supplementary information.
- If you include a Description column in a task map, make sure that entries explain why the task is performed rather than how to perform the task.
- If users are to perform the tasks in sequential order, number the individual tasks.
- Identify any optional and conditional tasks that appear in a task map for sequential tasks.
For an example of an optional task and a conditional task, see Task 3 and Task 5, respectively, in the example that follows.
- Cross-reference each task to its related instructions.
The cross-reference is usually to a book, chapter, or section.

The following example shows a typical task map.

EXAMPLE 5-2 Task Map

The following table shows a task map for setting up a custom JumpStart™ installation.

Task	Description	For Instructions
1. Make sure that the system is supported.	Check the hardware documentation to see if the system is supported.	<i>Solaris 9 Sun Hardware Platform Guide</i>
2. Make sure that the system has enough disk space for the Solaris 9 software. Also, consider the disk space requirements for any additional third-party software you might want to install.	Determine which Solaris software group to install. The disk space must accommodate a minimum of five file systems, including root (/), /usr, and /swap. (Optional) Check that the disk space for third-party software is adequate.	Chapter 2, "Planning Disk Space"
3. (Optional) Preconfigure system installation information.	Use the <code>sysidcfg</code> file or the name service to preconfigure installation information, for example, the <code>locale</code> . Then, you are not prompted to supply that information during the installation.	"To Preconfigure System Installation Information" on page 26

EXAMPLE 5-2 Task Map *(Continued)*

Task	Description	For Instructions
4. Prepare the system for a custom JumpStart installation.	Create a JumpStart directory, which involves doing the following: <ul style="list-style-type: none"> ■ Adding rules to the <code>rules</code> file ■ Creating a profile for every rule ■ Testing the profiles ■ Validating the <code>rules</code> file 	Chapter 6, “Preparing Custom JumpStart Installations”
5. <i>For network installations only.</i> Set up the system to install the software over the network.	To install from a remote CD image, set up the system to boot. Install the software from an install server or a boot server.	Chapter 9, “Preparing to Install Solaris Software Over the Network”

Using Flow Diagrams to Organize Tasks

A *flow diagram* organizes related, optional, and conditional tasks in a graphical format. If a task is complex and requires a high-level overview, you can use a flow diagram to lead readers through the task. A flow diagram can also provide cross-references to instructions for completing each task or subtask.

For more information about flow diagrams and to view an example, see [“Organize by Flow Diagram”](#) on page 72.

Use Continuous Prose for Some Tasks

If a task is not suitable for being explained in a procedure, use continuous prose to write the instructions. The following two examples show task-oriented material that is written as continuous prose.

EXAMPLE 5-3 Task Written as Continuous Prose (Example 1)

8.4.1 Verifying the Result of an Asynchronous Operation

To enable your application to perform different actions depending on whether an asynchronous operation succeeds, verify the result of the operation. For example, verify the result of an asynchronous operation to notify the user or to perform another recovery action if the operation fails.

To verify the result of an asynchronous operation, call the `get_except` function of the `Waiter` class.

EXAMPLE 5-3 Task Written as Continuous Prose (Example 1) *(Continued)*

The `get_except` function returns one of the following values:

- If the operation failed, `get_except` returns a pointer to an instance of the `ExceptionType` class. This instance provides information on why the operation failed.
- If the operation succeeded, `get_except` returns `NULL`.

EXAMPLE 5-4 Task Written as Continuous Prose (Example 2)

12.3.1 Activating Access Control for the Solstice EM Platform

Access control for the Solstice EM platform is set active or inactive during installation. If you want to enforce access control in your application, make sure that access control is active for the Solstice EM platform.

To determine whether access control is active, call the `get_access_control_switch` function of the `ACAccessControlRules` class.

To activate access control, call the `set_access_control_switch` function of the `ACAccessControlRules` class. In the call to `set_access_control_switch`, specify the access control switch status as `emAccessControlOn`.

To deactivate access control, call the `set_access_control_switch` function of the `ACAccessControlRules` class, specifying the access control switch status as `emAccessControlOff`.

Writing Procedures

A procedure is usually an ordered set of steps. However, a procedure can include only one step. A procedure can include prerequisites. A procedure can also be preceded by explanatory text or by cross-references to overview or supplementary information.

A procedure can also be followed by one or more examples and pointers to the next procedure or next topic that needs to be addressed.

To write effective procedures, follow these guidelines:

- Write procedures that are easy to follow.
- Place procedures appropriately.
- Use procedure headings appropriately.
- Use one method to describe a single procedure.

Write Procedures That Are Easy to Follow

To help readers understand and follow procedural content, use these guidelines when writing procedures:

- Try to write no more than 10 steps for each procedure.

If a procedure is a long, single series of steps, the procedure might be too complex. If a procedure is too long, review the user task analysis to see whether you can divide the task into two or more smaller procedures.

For online documents, try to write no more than five steps for each procedure. Be sure to read [Chapter 3](#) if you are writing a document for online use.

Do not break up a long procedure if you cannot logically divide the steps. Do not take users out of a procedure, and then back into the procedure, just to meet the recommended number of steps.
- Do not number single-step procedures.
- Include any prerequisite steps or procedures.

See [“Including Prerequisites” on page 106](#) for details.
- Provide explanatory text and visual cues.

Tell readers what is to happen after each step. For example, if a window opens as a result of a step, state that the window opens, and refer to the window by its name.
- Include all required information.

Readers do not like to frequently flip through pages or go to another document to find required information. In such instances, duplicate the information.

If procedural content is common to many procedures in a task, include the procedure at the start of the task. Then, in subsequent procedures, cross-reference the common procedure.
- The first time that you use a command in a procedure, cross-reference the related man page in the explanatory text following the step.

If the command appears later in the same procedure or section, cross-reference the man page again only if doing so in that context helps readers.
- Do not repeat overview information or information that is not related to the task.

Place overview information in a section or paragraphs before the procedure. Cross-reference any related, detailed supplementary information that supports the procedure.
- After the procedure, add one or more examples if doing so can help readers.

For information about including examples, see [“Providing Examples” on page 106](#). Then, consider pointing readers to the next procedure or next topic to be addressed.

Place Procedures Appropriately

To place procedures appropriately and consistently in a document structure, follow these guidelines:

- Put one or more procedures inside a section.

You cannot have a chapter that contains only procedure headings and no section headings.

Place any explanatory text or overview information that relates to one or more procedures under a section heading. The hierarchy for procedures within a section containing explanatory material is as follows:

1. A section heading
2. Explanatory text
3. The procedure heading
4. The steps
5. Another procedure heading
6. The steps

Generally, steps follow a procedure heading. If the procedure requires context, insert the text between the procedure heading and the first step. This introductory text is optional and should not merely repeat the text of the procedure heading. For example, if the procedure is titled “To Delete an Alarm,” do not include as introductory text “This procedure describes how to delete an alarm.”

If introductory text is appropriate, use one of these constructions:

- Full paragraph
 - Complete sentence that ends with a period
 - Complete sentence that ends with a colon
- Try to put procedures under a first-level section or a second-level section, not a third-level section.

Place related procedures at the same level.

Procedures usually belong higher than a third-level section in a document’s hierarchy. For third-level procedure headings to appear in the table of contents in print, you might need to contact your production group.

- Do not nest a procedure within another procedure.

For example, do not put second-level procedure headings under first-level procedure headings. Put second-level procedure headings under second-level section headings.

Use Procedure Headings Appropriately

Procedure headings identify single-step procedures and ordered sets of steps. Any text that includes at least one step is a procedure. When writing procedure headings, follow these guidelines:

- Identify software procedures with procedure headings that start with “To” or “How to.”

To Customize User Files
How to Customize User Files

If you know which infinitive phrase your readers are accustomed to seeing, use that phrase. Be sure to use the phrase consistently within the document or documentation set.

In printed software documentation, a glyph appears next to procedure headings. This glyph helps readers to identify procedures.

Note – Some hardware writing groups number each heading and begin each heading with a gerund. For example: “3.3 Initializing POST.”

- Write succinct yet meaningful procedure headings.
See [“Headings” on page 19](#) and [“Write Meaningful Headings and Subheadings” on page 81](#) for instructions on writing effective headings.
- Do not place a colon at the end of procedure headings.
- Follow any authoring tool instructions for using procedure headings.
- If you provide instructions for more than one way to perform a procedure, indicate the method (in parentheses) in procedure headings, using this wording:
 - To Install the System (Command Line)
 - To Install the System (GUI)
 - To Install the System (Web Browser)

Use One Method to Describe a Single Procedure

If readers can perform a procedure in more than one way, only show one method in a single procedure. For example, do not mix steps that use a command-line interface with steps that use a graphical user interface (GUI) in the same procedure.

Choose one method of presentation, command-line interface or GUI, that best suits the needs of your readers and the organization of the document.

An alternative is to present each method separately. Again, consider the needs of your readers and the organization of the document. Here are some of the more common ways to present each method separately:

- Put command-line procedures in one chapter and GUI procedures in another chapter.

Ensure that each chapter title identifies the specific method.

- Put related command-line procedures in one section and GUI procedures in another section.

Ensure that each procedure heading identifies the specific method.

To Start a Compilation (GUI)

To Start a Compilation (Command Line)

- Choose the GUI method, showing pertinent screen captures of GUI windows within the procedure.

Then, at the end of the procedure, include a command-line example that shows the same actions.

Use screen captures as guideposts only, not as a substitute for steps. Do not overuse screen captures. Provide visual cues only as necessary, and explain what happens after each step. See [Broken Link \(Target ID: SGILLOS-63\)](#) and [Broken Link \(Target ID: SGLEGAL-11\)](#) for additional information about using screen captures.

- If only one step has a command associated with it, consider adding a Note or Tip following the step that shows the command.

If you provide both GUI and command-line information, provide readers with enough information to choose one method over the other method. For example, explain that GUI procedures offer a simple interface and instant verification. Explain that command-line procedures are often preferred by users who are familiar with using code and want automation in a script.

For guidelines on writing command-line procedures, see [“Write Meaningful Steps” on page 119](#). For guidelines on writing GUI procedures, see [Broken Link \(Target ID: SGGUI-31861\)](#).

You can use illustrations to show how to perform hardware procedures. See [Broken Link \(Target ID: SGILLOS-39722\)](#) for illustration guidelines.

Writing Steps

When writing steps, determine what a user needs to do first, next, and last. Write clearly so that a user understands exactly what to do. To write concise steps, follow these guidelines:

- Number the steps.
- Make each step short and equivalent to one action.
- Write each step as a complete sentence in the imperative mood.
- Write meaningful steps.
- Use branching of steps appropriately.
- Check for structural problems.

Note – Although some examples in this chapter show regular-weight alternate font material within a bold step, some authoring tools might not permit this formatting.

Number the Steps

After you determine the correct order in which to present the steps, follow these guidelines to number the steps:

- Do not use a number if a procedure has only one step.
If you assign a numeral “1” to a single-step procedure, readers might think that one or more steps are missing. Some authoring tools provide a glyph in place of a numeral.
- If procedures include two or more steps, use numerals to number steps.
Use letters for sequential substeps.
- Indicate optional steps by including the word “Optional” in parentheses.
3. (Optional) Reboot the system.
- If users must perform different actions based on the outcome of a step, use a bulleted list to show the alternatives.
Use letters for substeps.
1. Determine whether you need to remove the disk drive.
 - If no, go to Step 2.
 - If yes:
 - a. Gently pull back on foam piece 2.
 - b. Slide the disk drive out of foam piece 2.
 - c. Place the drive on the antistatic mat.

2. Carefully lift the component from the unit.

Make Each Step Short and Equivalent to One Action

A user can more easily follow a procedure when each step is short and explains one action. To help a user understand what to do in each step, follow these guidelines:

- Try to use no more than 20 words to write each step.

Hyphenated terms and multiword product names count as one word.

Incorrect:

6. Type the email address of the recipient in the To field of the Compose window, using spaces or commas to separate multiple addresses.

Correct:

6. Type the recipient's email address in the To field of the Compose window.

Use spaces or commas to separate multiple addresses.

- Keep any explanatory text as short as possible.
- Do not bury steps in a paragraph.

Incorrect:

Become superuser, stop the NIS server, change your files, and restart the NIS server.

Correct:

1. Become superuser.

2. Stop the NIS server.

```
# /etc/init.d/yp stop
```

3. Make the necessary changes to your files.

4. Restart the NIS server.

```
# /etc/init.d/yp start
```

- Write about only one action in each step.

Exceptions to this guideline include the following:

- You conclude a step with “and press Return” because that keystroke is a necessary component of the step.

However, if all steps in a procedure conclude with “and press Return,” do not repeat this instruction at the end of each step. Instead, explain in introductory text to the procedure that users must press the Return key after each step. If the book contains many procedures, explain this use of the Return key in an introductory chapter or the preface.

- You begin a step with a common instruction such as “Log in as,” “Log in to,” or “Become superuser,” followed by another short instruction.

However, this combination of steps depends on the audience and the subject matter. Novice users might need this type of instruction, while experienced users would not.

For novice users, provide this level of detail:

1. Become superuser.

```
$ su
Password:
```

2. Reboot the system.

```
# reboot
```

For experienced users, provide general instructions:

1. Become superuser and reboot the system.

Write Each Step as a Complete Sentence in the Imperative Mood

Verbs do most of the work in instructions. Reserve participles and gerunds for lists. When writing steps, follow these guidelines:

- Write each step as a complete, correctly punctuated sentence.
- Phrase the step as an action rather than a question or statement.

Incorrect:

3. Do you have an account on this system?

What you do next depends on whether you have an account on the system.

Correct:

3. Type your password.

- If you have an account on this system, type your password.
 - If you do not have an account, contact your administrator.
- Ensure that each step contains an active verb in the imperative mood.

Put the verb at the start of the step unless you are explaining why, how, or where an action takes place. You might clarify a step in order to do one of the following:

 - Qualify the verb.

Gently lift the I/O board up and out of the unit.
 - Provide information to orient readers.

In the Add Attachments window, click Add File.
 - State a condition.

If the card's I/O address conflicts with another device, change the I/O address according to the manufacturer's instructions.

- Show the desired outcome or reason for the action.

To secure the board to the unit, tighten both screws.

- Stress the importance or consequence of an action.

To shut down the system, type `shutdown`.

- Do not use command names as verbs.

Incorrect:

3. cd to the new directory.

Correct:

3. To change to the new directory, type `cd`.

Write Meaningful Steps

To write complete steps that are effective, do the following:

- Make the task, not the command, the focus of the step.

Follow the step immediately with command syntax, if applicable.

Incorrect:

3. Type `ufsrestore` and press Return.

Correct:

3. Verify that you successfully backed up the system.

```
# ufsrestore -t
```

- Follow the step and the command line with a description of the command options and variables that directly relate to the step.

Note – If the command line contains only one or two self-explanatory variables and no command options, you can choose not to define the variables. For example, if *filename* and *username* are the only variables, you can choose not to define these variables.

To present command options and variables, consider using one of these formats:

- A sentence that explains one or two command options or variables

4. To examine a crash dump, use the `mdb` utility.

```
# /usr/bin/mdb -k crashdump-file
```

where *crashdump-file* is the name of the crash dump file for the operating system. The `-k` option specifies kernel debugging mode.

The use of lowercase “where” is acceptable in this instance because this format is an industry standard.

- A two-column format that describes two or more command options or variables

3. Shut down the system.

```
# shutdown -i0 -gn -y
```

- i0 Shuts down the system to init state 0 (zero), the power-down state.
- gn Notifies logged-in users that they have *n* seconds before the system begins to shut down.
- y Specifies that the command runs without user intervention.

Do not use “where” to introduce the options or variables that are being described using this format because lone words cause translation problems.

- Explain to readers why they are to skip a step or jump to a step.

5. Determine whether you want the partition table to be the current table.

- If you want to change the displayed partition table, type *n* and go to Step 8 on page 9.
- If you want to use the current partition table, type *y* when prompted:

```
Okay to make this the current partition table [yes] y
```

Use Branching of Steps Appropriately

Use branching if the action to take at a particular step in a procedure differs depending on the user’s situation or desired outcome. Follow these guidelines to determine whether a step requires the use of branching:

- Use branching if the procedure is the same for many cases and only differs at one or two steps.

2. Format the diskette.

- To format the diskette for a UFS file system, type `fdformat` and press Return.
- To format the diskette for an MS-DOS file system, type `fdformat -d` and press Return.

- If the branching condition applies to the whole procedure, use two different procedures.

For example, if the procedure has several steps that provide alternatives for HTTP and FTP protocols, create two procedures. Write one procedure that shows how to accomplish the task through HTTP and the other procedure through FTP.

- If several steps contain branches, consider splitting the procedure into two separate procedures.
- If a particular condition requires a substitution in most of the steps in the procedure, provide that information in a Note.
For example, tell readers to use the default directory if their default directory is different from the directory provided in the steps.
Put the Note at the beginning of the procedure, not in the branches of the steps.
- If a step is optional, do not use branching.

Incorrect:

6. Determine whether you want to make this printer the default printer.

- If no, go to Step 7.
- If yes, select Default.

Correct:

6. (Optional) To make this printer the default printer, select Default.

If one branch states to proceed to the next step, you might be able to use an optional step, not a branch. However, do not use an optional step if any user needs to complete the step for the procedure to be successful.

- Do not use branching to provide all of the possible actions in a confirmation step at the end of a procedure.

For example, many graphical user interfaces provide OK, Apply, and Cancel buttons in each dialog box. If you have described the actions of these buttons in a central location, do not repeat this information at the end of every procedure.

Assume that the user wants to confirm the settings in the dialog box and just say "Click OK."

- If a user must know certain information to determine which branch to follow, include the process by which the user can find out that information.

Incorrect:

3. Ensure that the .html file is complete.

- If the file is complete, post the file on the internal web site.
- If the file is not complete, see Appendix C.

Correct:

3. Use a text editor to ensure that the .html file is complete.

- If the file is complete, post the file on the internal web site.
- If the file is not complete, see Appendix C.

Check for Structural Problems

Use the initial user task analysis to guide your procedure writing. As you write, you might discover that you have to further break down or combine some procedures. This section describes some signs of a possible need for restructuring.

Duplicate Sets of Steps

If two or more procedures begin with the same set of steps, consider creating a separate procedure with the shared steps and then cross-referencing to that procedure in the related procedures.

For example, suppose you have several procedures that are accomplished through a web page deep in the application's hierarchy. To describe how to get to the page requires four steps. You can create a separate procedure such as "To Access the Modify Objects Page." Then, at the beginning of each modification task, Step 1 can say, "If you are not already on the Modify Objects page, see 'To Access the Modify Objects Page' on page 8."

Nearly Identical Procedures

Look for two or more procedures that are alike except for one or two steps that require a different value or choice. Consider combining the procedures into one procedure. Provide information in the steps that require alternative choices.

For example, a word processing application might use the same basic procedure to create generated lists such as tables of contents, lists of tables, and lists of figures.

Rather than having separate procedures for each type of generated list, you can provide one procedure that describes how to create generated lists. Then, in the relevant steps you can provide the specific file names related to the type of list the user is creating.

See ["Use Branching of Steps Appropriately"](#) on page 120 for details.

Many Nested Substeps

Multiple levels of substeps in several steps in a procedure probably indicate that the procedure should be divided into separate procedures.

Procedures With More Than 10 Steps

As mentioned in “[Write Procedures That Are Easy to Follow](#)” on page 112, long procedures are difficult to follow. Look for a logical place to divide the procedure.

You might want to describe the overall procedure, followed by a task map or numbered list that describes the related procedures.

Several Single-Step Procedures

The presence of many single-step procedures might indicate a few different structural problems:

- If many of the procedures describe the same basic action, you might be able to collapse the procedures.
For example, suppose you have separate single-step procedures for opening different applications from a front panel. You might want to provide one single-step procedure with the heading “To Open an Application From the Front Panel.” If necessary, provide a cross-reference from each application.
- If some of the procedures are related logically, you might be able to combine the procedures.
For example, suppose you must add one line to a system file to set a printer resource and another line to set a scanner resource. You can provide a procedure with the heading “To Add Peripherals to the .Nresource File.” The procedure contains the steps that are common to the procedures that are being combined. Then one step includes the different text lines for each peripheral.
- Examine the single-step procedures to ensure that all required steps are provided.
For example, you might be assuming that the user is at a particular place in the GUI or has already logged in to the system.

alpha Composed November 11, 2005

Writing for an International Audience

This chapter discusses the following topics:

- “Guidelines for Writing for Translation” on page 125
- “Cultural and Geographic Sensitivity” on page 126
- “Definitions and Word Choice” on page 128
- “Grammar and Word Usage” on page 130
- “Numbers, Symbols, and Punctuation” on page 134
- “Illustrations and Screen Captures” on page 135

Guidelines for Writing for Translation

Following the basic guidelines for good technical writing is important when you are creating documentation. Following these guidelines can also help you avoid producing documentation that is confusing or offensive to translation vendors or to readers from other cultures.

Follow these basic guidelines when you are preparing documentation for an international audience:

- Use American English spelling and punctuation guidelines.
A standard dictionary for publications groups is the *Merriam-Webster Collegiate Dictionary*, which is available online at <http://www.m-w.com>.
- Use standard authoring tools and templates for producing documentation.
Using predefined templates and tools leads to consistency, which is essential when creating documentation that is easy to translate.
- Keep the documentation culturally neutral by avoiding elements that are difficult to translate or hard to read by people whose native language is not American English.
These elements are explained throughout this chapter. Remember that documentation that is written in English is often distributed worldwide.
- Have your document edited, if possible, before giving it to a translation vendor.
Many complaints from translation vendors concern basic errors in the English version of a document, such as typos and inconsistent term usage.
- Be aware that text expansion can occur when a document is translated.
A document can increase in size by up to 25 percent, which can substantially expand the breadth of a hard-copy document. Such expansion can affect the binding, packaging, and shipping constraints.

Cultural and Geographic Sensitivity

Writers need to think globally. Conventions that are standard in one country might be handled differently in other countries. Use the following guidelines when writing for an international audience.

Use Culturally Neutral Examples

- Avoid using examples that are culturally bound, such as names of places, public figures, or holidays that might be unrecognizable to people living in different countries.
If you do use examples that are culturally bound, use examples that represent a variety of cultures or that are internationally recognized. For example, you may use international cities, such as Paris, New York, Tokyo, London, and Hong Kong.
- Avoid political or religious references.
- Avoid gender-specific references.

Include International Date, Time, and Contact Information

- Be aware that dates are displayed differently in different countries.
 - **Month, day, year.** Used mainly in the United States.
 - **Day, month, year.** Used in Europe.
 - **Year, month, day.** Used in Asia. This format is also used by the International Organization for Standardization (ISO) standard for numeric representation of dates.

For clarity, write out dates. For example, write “6/28/03” as “June 28, 2003.” If abbreviations are necessary, define them and then use them consistently. Solaris release dates, such as “Solaris 8 4/01,” are exempt from this guideline.

- Be aware that times are displayed differently in different countries.

Time formats that use a 12-hour clock and the *ante meridiem*, *post meridiem* (a.m. and p.m.) system are not universally understood. Consider using a 24-hour system or describing the time in relation to the time of day. For example, you can write “1:00 p.m.” as either “13:00” or “1:00 in the afternoon.”
- Ensure that address or telephone information is complete.

Include telephone country codes, area codes, and time zones when you provide phone numbers and calling hours in a document that might be distributed internationally. Use “+1-” before the area code for phone and fax numbers within the United States. Be aware that any toll-free telephone numbers that you provide cannot be dialed from most countries outside the United States. Do not forget to specify the time zone if your readers are from more than one time zone.
- Be careful when including information about warranties or technical support.

Be specific as to which countries honor the warranties or have technical support available, if possible.

Avoid Informal Language and Styles

- Avoid humor.

What might be funny in one language, whether an illustration or written text, might be obscene in another language. Humor is strictly cultural, and it cannot be translated easily from one language to another language.
- Avoid irony.

Even native speakers of English have difficulty discerning irony in writing.
- Avoid idioms and metaphors.

If you use a metaphor to describe an action, provide additional contextual explanation so that the translator does not misunderstand and translate the text incorrectly. If the translator is unfamiliar with the metaphor, the translator might

have to guess at the meanings of key terms.

For example, if you describe a file system hierarchy as a “tree structure,” or if you describe a “parent-child” relationship, include an illustration or example. That way the translator understands that you do not mean these terms to be interpreted literally.

Definitions and Word Choice

Follow these guidelines to avoid common pitfalls that make translators and readers uncertain of your intended meaning.

Avoid Jargon and Slang

If a term is not listed in a standard dictionary or a technical source book, do not use it. If a term is not defined in the text or in the glossary, do not use it. If translators cannot look up an unfamiliar term, they might have to guess at its meaning.

Use Terms Consistently

- Avoid using terms that can have several different meanings.

For example, the word “system” can refer to an operating system (OS), a combination of OS and hardware, a networking configuration, and so on. If you do use such a term, ensure that you define it and use it consistently in a document. Ensure that you also add it to the glossary.

- Use terms consistently throughout a document.

Synonymous terms in a document can be troublesome for a translator. The words “show,” “display,” and “appear” might seem similar enough to use interchangeably. However, a translator might think you used the different words deliberately for different meanings, and a translator might interpret the text incorrectly.

Other inconsistent usage with which translators might have trouble include the following:

- Down, crash
- Menu option, menu item
- Connector, port, plug
- Output, result
- Some, several, many, few
- Platform, architecture, system
- Scroll list, scrolling list, scrollable list
- Executables, executable program, executable code, executable application, executable file
- For literal command names or other computer terms, include a phrase such as “the ... command” or “the ... function” on first reference. Including the surrounding article and term can clarify all references.
- Be careful about using the word “available” because it can present difficulties to a translator with limited technical knowledge. Instead, use definitive words such as “active” or “valid.”
- Use uppercase and lowercase letters consistently in like elements throughout a document.

Using consistent case helps a translator determine the proper interpretation of a term. The use of consistent case is significant for reserved keywords, class names, and variables.

Avoid Abbreviations, Acronyms, and Contractions

- Avoid using abbreviations and acronyms.

Many languages do not have abbreviations and cannot accommodate them. If you use abbreviations and acronyms in your documentation, define them the first time you use them in text. Provide a list of acronyms and abbreviations at the end of the book as part of the glossary, in an appendix, or in a separate list of abbreviations. When you define the term, give the spelled-out version first, followed by the acronym or abbreviation in parentheses.

For example, using the initials “DT” for “directory tree,” has no Japanese equivalent. Instead, use “directory tree (DT)” initially and “DT” thereafter. See the <http://opensolaris.org/os/community/documentation/glossary> for abbreviations and acronyms that can appear in documentation.
- Avoid using abbreviations and acronyms in the plural form.
- Avoid using contractions that are difficult to translate.

If you do use contractions in your documentation, follow the guidelines described in [Broken Link \(Target ID: SGMECHANICS-40579\)](#).

Grammar and Word Usage

If you adhere to English grammar guidelines and use terms correctly in your documentation, you can eliminate much of the ambiguity that slows the translation process.

Follow These Grammar Guidelines

- Ensure that spelling and word usage are correct.
Use electronic spelling checkers and copy editors to ensure accuracy.
- Do not leave out articles such as “the,” “a,” and “an.”
Incorrect: Place screwdriver in groove.
Correct: Place the screwdriver in the groove.
- Include the word “that” when it is used to introduce a restrictive clause.
See [“Differentiate Between Restrictive Clauses and Nonrestrictive Clauses”](#) on page 53.
Incorrect: Verify your configuration matches what is shown in the example.
Correct: Verify that your configuration matches what is shown in the example.
- Avoid passive clauses, such as “the program was activated.”
See [“Use Active Voice and Passive Voice Appropriately”](#) on page 49.
- Do not put a list in the middle of a sentence.
See [“List Introduction Guidelines”](#) on page 23.
- Check for the correct placement of prepositional phrases.
Incorrect: Remove the filler panel from the slot with the pliers.
Correct: Use pliers to remove the filler panel from the slot.

Use Words Precisely

- Be careful about using the same term in multiple grammatical categories, such as verb, noun, and adjective.
Incorrect: Plug the plug into the wall outlet.
Correct: Connect the plug into the wall outlet.

Using “plug” as both a verb and a noun is confusing to translators. Translators might have to use a different term in each case. Also, do not use several terms to refer to the same thing.

- Be precise about using the words “when” and “if.”
Use “when” for an inevitable event and “if” for a conditional event.
“When the prompt is displayed” implies that the prompt will be displayed.
“If the prompt is displayed” implies that the prompt might or might not be displayed.
- Avoid using the word “may” unless you mean permission or capability, as in “A node may have more than one parent.”
Use the words “might” or “can” in place of the word “may.” The word “might” indicates a possibility, and “can” means the power or ability to do something. A translator who must translate the English word “may” in text often chooses whether to translate it as “can” or “might.” The original writer is in a better position to know which word is more accurate and should therefore use the correct word.
- Avoid using the words “there” and “it” at the beginning of a sentence if those words take the place of the subject of the sentence and are followed by a linking verb such as “is” or “are.”
This construction delays the subject of the sentence, which can confuse translators.
Incorrect: There are only a few troubleshooting tickets left.
Correct: Only a few troubleshooting tickets are left.
Incorrect: It is a simple path.
Correct: The path is simple.
- Avoid ambiguous phrases.
For example, “first-come, first-served” is ambiguous. If possible, rewrite as “in the order received” or “in the order in which they are received.”

Use Modifiers and Nouns Carefully

- Be careful with compound modifiers.
Compound modifiers can be hard to understand and to properly translate. You might need to rewrite the sentence or hyphenate the phrase, for example, “real time-saver,” “real-time operation.” See **Broken Link (Target ID: SGMECHANICS-21630)** for guidelines for hyphenating terms.
- Avoid using general modifiers that might be interpreted in several ways.
The translation of a term with multiple meanings requires the ability to discern the appropriate equivalent in the target language, based on the context. However, most translators do not have as much technical knowledge as engineers, and they might translate questionable terms incorrectly.

For example, the following sentence presents a difficult translation:

The Solaris Common Desktop Environment (CDE) is an advanced Motif-based desktop with an easy-to-use interface that provides a consistent look and feel across UNIX platforms.

The phrase “advanced Motif-based desktop” raises questions for a translator such as is it “a desktop that is based on advanced Motif” or is it “an advanced desktop that is based on Motif”? The sentence could be rewritten as follows:

The Solaris Common Desktop Environment (CDE) is an advanced desktop system that is based on Motif. This system provides an easy-to-use interface that is consistent across UNIX platforms.

- Do not use noun clusters of more than three nouns.

Try to clarify noun clusters by using prepositions such as “of” or “for.”

Incorrect:

In certain situations, the certificate chain verification process is disabled.

Correct:

In certain situations, the verification process for the certificate chain is disabled.

An exception is a noun string that results when you use a three-word product name as a modifier, as in “Solaris Web Start program.” A product name that you use as a modifier counts as one word. See “[Write Meaningful Steps](#)” on page 119.

- Repeat the modifier in noun phrases that are joined or are linked together.

Incorrect: You must set up a mail service on a new network or subnet.

Correct: You must set up a mail service on a new network or new subnet.

- Repeat the main noun in conjoined noun phrases.

Incorrect: You can access a new or existing network.

Correct: You can access a new network or an existing network.

Limit the Use of Pronouns

- Avoid vague and uncertain references between a pronoun and its antecedent.

A pronoun that forces a reader to search for an antecedent can frustrate or mislead the reader, as well as a translator. Ensure that the noun to which the pronoun refers is clear.

- Do not use the following words as pronouns:

All
Another
Any
Each
Either
Few
Many
Neither
None
One
Other
Own
Some
Several

When these words are used as pronouns, their antecedent is unclear.

Incorrect:

These macros classify character-coded integer values. Each is a predicate that returns nonzero for true, 0 for false.

Correct:

These macros classify character-coded integer values. Each macro is a predicate that returns nonzero for true, 0 for false.

Incorrect:

Custom layout managers. To provide custom behavior that ensures the best GUI performance, write your own.

Correct:

Custom layout managers. To provide custom behavior that ensures the best GUI performance, write your own custom layout managers.

- Avoid using pronouns, such as “it,” “its,” “this,” “they,” “theirs,” “that,” “these,” and “those,” especially at the beginning of a sentence.

Use these pronouns only when the noun to which the pronoun refers is clear.

Unclear: This provides the following benefits.

Clear: This support provides the following benefits.

Simplify Sentences

Break up sentences that contain more than two uses of the words “or” or “and.”

Incorrect:

The software consists of four daemon processes that coordinate the scheduling, dispatch, and execution of batch jobs and monitor job and machine status, report on the system, and manage communication among the components.

Correct:

The software consists of four daemon processes. These processes perform the following functions:

- Schedule, dispatch, and execute batch jobs
- Monitor job and machine status
- Report system status
- Manage communication among the components

Numbers, Symbols, and Punctuation

Follow these guidelines to minimize confusion about the numbers and symbols in your documentation.

Clarify Measurements and Denominations

Most of the world uses the metric system, although many people in the United States are familiar only with the U.S. equivalents for the metric system. Also, number and currency formats vary worldwide. In many countries, commas and decimal points are used differently. As a courtesy to readers who use different numeric systems, follow these guidelines:

- When providing U.S. measurements, include the metric equivalent in parentheses if it is appropriate for the product you are describing.

Most standard American English dictionaries contain a U.S.-to-metric conversion chart under the “metric” entry.

- If you use the word “billion” or “trillion,” explain the word in a footnote so that the exact value is clear to readers in all countries.
- If you are specifying prices, indicate the currency used.

For example, write “USD” for United States dollars and “EUR” for the European euro.

Avoid Certain Symbols and Punctuation Marks

- Do not use these symbols:
 - The # symbol to indicate “pound” or “number”
 - A single quote (') to indicate “foot”
 - Double quotes (") to indicate “inch”

These symbols are not recognized in many countries outside the United States.

- Avoid using symbols such as “/” and “&” in text.

Many symbols have multiple meanings, and translators might have difficulty deciding which meaning you intended. For example, the “/” symbol can mean “and,” “or,” “and/or,” “with,” “divide by,” “root,” or “path-name divider.”

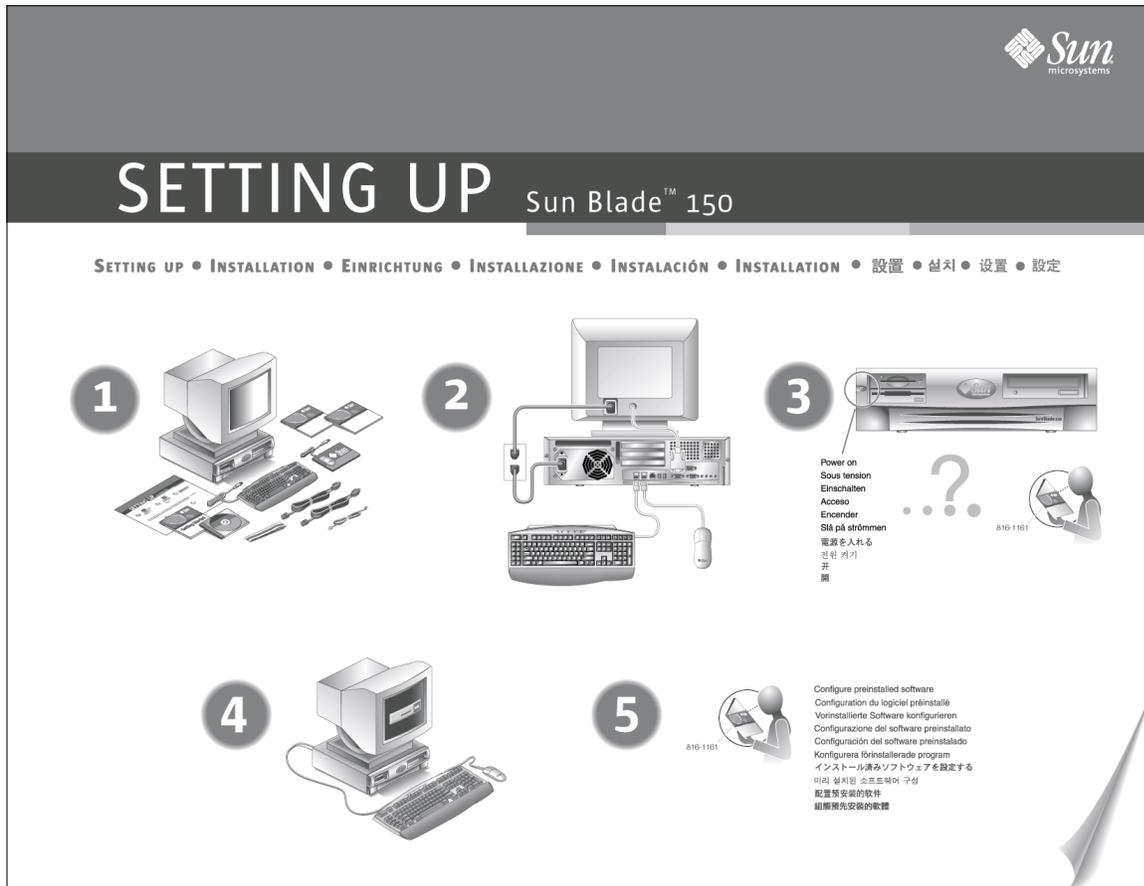
See **Broken Link (Target ID: SGMECHANICS-24)** for acceptable uses of the “/” symbol.

Illustrations and Screen Captures

Follow these pointers to maximize the international appeal and comprehension of illustrations and screen captures.

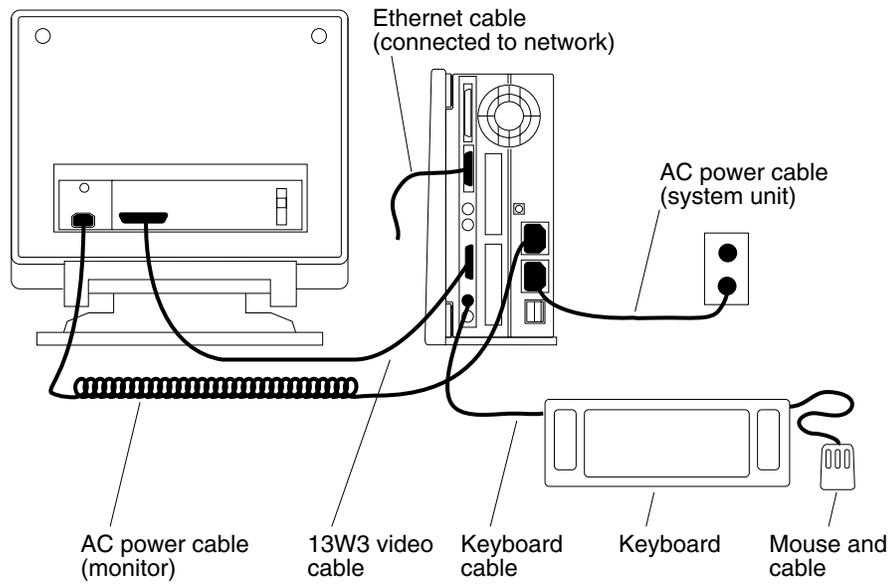
Choose Illustrations to Communicate Internationally

- Use illustrations instead of text whenever possible to convey a complex concept. Ensure that the accompanying text complements the message conveyed by the illustration.
- Do not insert an illustration into the middle of a sentence. See **Broken Link (Target ID: SGILLOS-65)**.
- Remember that not everyone reads from left to right. If necessary, indicate the intended sequence that you want a reader to follow in the illustration.

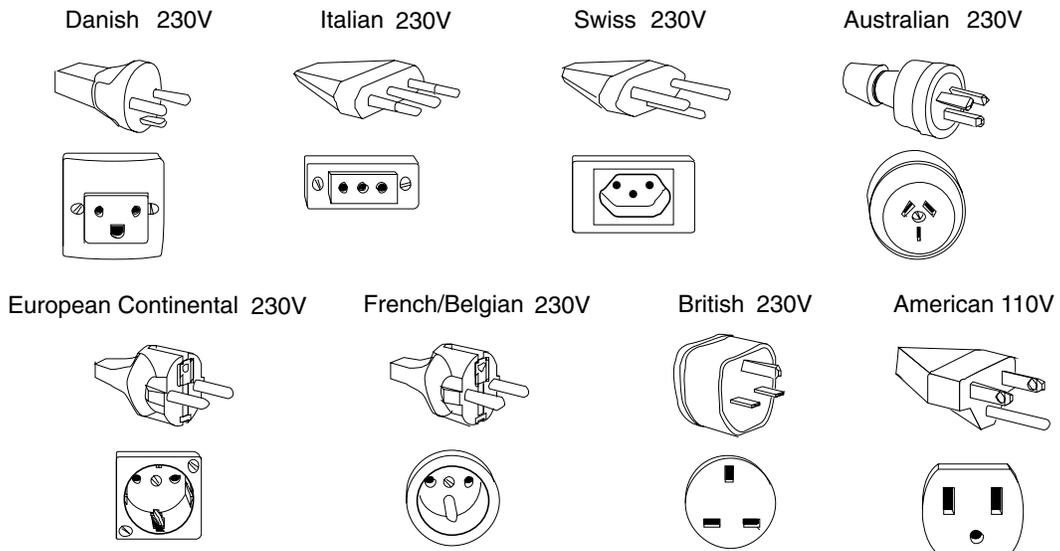


- Use illustrations that are internationally acceptable.

For example, almost every country has its own type of power connector. Instead of illustrating each type of connector, use generic connectors and receptacles, as in the following illustration.



However, when describing various types of connectors and receptacles, illustrate and label the specific type used in each country, as in the following illustration.



Create Callouts That Are Easy to Translate

A *callout* is a text element that defines a portion of an illustration or provides the reader with additional information about an illustration. When you create callouts in documentation that will be localized, follow these guidelines:

- Keep callouts short.
Leave ample space, both vertically and horizontally, for callout text in illustrations. Translated text might require as much as 25 percent more space than English text.
- Make certain that the callouts correlate with the paragraph text.
Use callouts instead of text if the concept can best be understood graphically and needs little explanation.
- Format callouts so that you can edit them separately from the illustration.

For more guidelines about creating callouts, see [Broken Link \(Target ID: SGILLOS-39722\)](#).

Use Charts and Tables

- Use charts and tables to clarify essential information.
Charts and tables are internationally recognized by readers as containing important material.
- When formatting charts and tables, be aware that text can expand by up to 25 percent during translation.
- Do not insert a table into the middle of a sentence.
See “[Writing Text for Tables](#)” on page 29.
- Do not use sentence fragments for table column headings.

Incorrect:

If the user asks...

How do I do this?

Then you must respond by...

Showing the user how to perform the task.

Correct:

Questions

How do I do this?

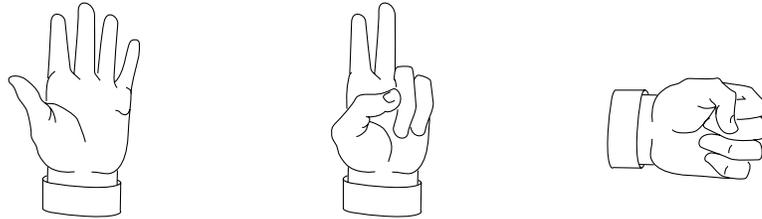
Answers

Show the user how to perform the task.

Use International Illustrations, Symbols, and Examples

- Do not use a hand in a symbolic gesture.

Almost any way that you position a hand can be considered an offensive gesture, depending on the culture, as shown in the following illustration.



- When using code examples or showing screen captures, make sure that the machine names, login names, and system names are not culturally offensive.

Instead of:

```
heavenly%
```

Use a culturally neutral example:

```
system1%
```

- Avoid using road signs in illustrations because they differ from country to country.
- Avoid illustrations that relate to alcohol or alcohol-related material, because those types of illustrations might be offensive.
- Be careful when using everyday objects in examples.

Be certain that the object exists in most countries. Be aware that the object might be interpreted in various ways in different parts of the world.

For example, you can use a light bulb to indicate light, but not the concept of an inspiration.

- Avoid using trendy objects, historical references, or film, cartoon, or video characters.
- Avoid using animals, because they might carry symbolic significance.

For example, some web pages use a dog to indicate a “fetch” function. While this connection might be clear to readers from Western cultures, it might not be understood by readers from other cultures. Dogs are not kept as pets or used for hunting and retrieving in all cultures.

- Do not use color to convey meaning.

Color communicates different meanings in different cultures. For example, the color green is sometimes used to indicate paper money in the United States. However, the color green does not work in many other countries where money is not green.

The color red can signify “stop” or “danger” in the United States. But in China, the color red can indicate happiness, and in France, red can denote aristocracy.

Structure of Documents

Many different types of technical documents exist. The documents range from a single-chapter manual, such as a white paper or simple installation guide, to a highly technical user's guide or training manual.

This chapter discusses the following topics:

- "Structure of Manuals" on page 141
- "Descriptions of the Parts of a Document" on page 143
- "Types of Software Manuals" on page 151
- "Other Product Documents" on page 153
- "Training Documents" on page 156

Structure of Manuals

Manuals might consist of either a single chapter or multiple chapters.

Manuals With a Single Chapter

Manuals with a single chapter are usually small and narrowly focused on a single subject. Examples of manuals with a single chapter include the following:

- Simple installation manuals
- Release notes
- Product notes
- White papers
- Documentation roadmap

Note – Release notes require special consideration. See [“Release Notes and Product Notes” on page 155](#) for more information.

The following table lists the components of the single-chapter manual. The components are listed in the order in which they appear within the manual. The *optional* components can be provided at your discretion. You probably do not need a table of contents if the document has only one or two pages. Likewise, an index is unnecessary for a document of fewer than 20 pages. Manuals with a single chapter always require title pages and legal notice pages.

TABLE 7-1 Possible Components of Manuals With a Single Chapter

Part of the Manual	Requirement
Title page	Required.
Legal notice	Required.
Table of contents	Optional.
List of figures	Optional. Helpful if many numbered figures are used.
List of tables	Optional. Helpful if many numbered tables are used.
List of examples	Optional. Helpful if many numbered examples are used.
Chapter	Required.
Appendix	Optional.
Index	Required if the chapter has more than 20 pages.

Manuals With Multiple Chapters

Manuals with multiple chapters are the most common types of manuals. These manuals require a title page as well as front and back matter.

The following table lists the components of manuals with multiple chapters. The components are listed in the order in which they appear within a manual. *Optional* means that the component of the manual might be required in certain writing groups. When in doubt, check with your writing manager or project lead.

TABLE 7-2 Possible Components of Manuals With Multiple Chapters

Part of the Manual	Requirement
Title page	Required.
Legal notice	Required.
Table of contents	Required.
List of figures	Optional. Helpful if many numbered figures are used.
List of tables	Optional. Helpful if many numbered tables are used.
List of examples	Optional. Helpful if many numbered examples are used.
Preface	Required.
Part I	Optional. Use a roman numeral.
Chapter table of contents	Optional.
Chapters	Required.
Part II	Required if a Part I is used.
Parts III and higher	Optional.
Appendixes	Optional.
Glossary	Optional.
Bibliography	Optional.
Index	Required for manuals that are longer than 20 pages.
Revision history	Optional.

Descriptions of the Parts of a Document

This section describes the general editorial formats of the parts of a manual. The parts are listed in the order in which they appear within a manual.

Table of Contents

The table of contents can list the first-level headings, second-level headings, and third-level headings in a manual. Headings can be numbered or unnumbered, depending on the style determined for your document.

A manual must have a table of contents if the manual has more than one chapter. The table of contents always begins on a right page in a printed manual.

List of Figures

The list of figures lists all numbered figures in the manual. Consider including the list of figures if the manual has more than one numbered figure and more than one chapter. The list of figures begins on a right page in a printed manual.

List of Tables

The list of tables lists all numbered tables in the manual. Consider including the list of tables if the manual has more than one numbered table and more than one chapter. The list of tables begins on a right page in a printed manual.

List of Examples

The list of examples lists all numbered code examples and other types of examples in the manual. Consider including the list of examples if the manual has more than one numbered example and more than one chapter. The list of examples begins on a right page in a printed manual.

Preface

The preface describes the purpose and scope of the manual and includes an overview of the parts of the manual. The preface begins on a right page in a printed manual.

Depending on the purpose and complexity of the manual, the preface might contain all or some of the sections listed here. The preface might also contain sections specific to a documentation set.

First, explain the purpose of the manual in one or two sentences. Identify the level of technical sophistication that the reader must possess to use the manual effectively. Next, include sections similar to the following if the additional information is relevant to the book:

- **Who Should Use This Book.** Describe the audience or class of reader for whom the manual is intended. The audience description might include the following information:
 - Required knowledge, such as a specific programming language
 - Required experience or familiarity with the Solaris operating environment or a hardware platform
 - Definition of the type of user or functional responsibility, such as applications programmer, system administrator, or field engineer
 - Terms that relate to the tasks the user might perform

- **Before You Read This Book.** If this manual requires that the user read other documents before effectively using this manual, list those other documents.
- **How This Book Is Organized.** Briefly describe the contents of the manual. Consider using a live cross-reference to list each chapter and appendix.
- **Related Books.** List titles of documents that are related to the manual. Also list third-party books, and their authors and publishers, that are mentioned in the text or that readers might find useful.
- **Accessing Documentation Online.** Inform readers how to view documents online.
- **Ordering Documentation.** Inform readers how to order printed documents.
- **Contacting Technical Support.** Provide online contact information for technical support.
- **Typographic Conventions.** List and explain special symbols, characters, or typography that are used in the manual.
- **Shell Prompts in Command Examples.** List and explain prompts used by various UNIX shells that are used in the manual.

The FrameMaker preface template and the SGML preface file further explain the information that you might include in the preface.

Chapters

Chapters comprise the main body of a manual. A manual must contain at least one chapter. If chapters are in a single-chapter book, the chapter has no number. For more information, see [“Manuals With a Single Chapter” on page 141](#). If chapters are in a multichapter book, the chapters are numbered sequentially. For more information, see [“Manuals With Multiple Chapters” on page 142](#).

All chapters begin on a right page in a printed manual.

Appendixes

Appendixes provide supplementary information to the main body of the manual. Appendixes appear at the end of the manual. Typical material for appendixes includes the following:

- Long programming code examples
- Long lists, charts, and tables
- Summary information, such as a list of a program’s function keys
- Technical specifications

Do not use an appendix as a repository for miscellaneous information that you are unable to integrate in the body of the text.

Appendixes can use numbered or unnumbered section headings, depending on the chapter style of the manual. For example, you would use numbered section headings in appendixes for manuals that use numbered section headings in chapters.

Each appendix is designated by a letter, for example, Appendix A, Appendix B, and so on. If the book contains a single appendix and your authoring tool enables you to change the setting, the name of the single appendix should be Appendix rather than Appendix A. Each appendix begins on a right page in a printed manual.

Glossary

A glossary is an alphabetical list of defined terms, phrases, abbreviations, and acronyms. The glossary defines terms that might not be clear to the reader.

The glossary is included within a manual in the following location:

- At the end of the manual, following the last appendix
- At the end of the manual, following the last chapter if the manual contains no appendix
- Before a bibliography or index

The glossary begins on a right page in a printed manual.

The *OpenSolaris Glossary* contains terms that are commonly. You might also have developed a glossary with more specific definitions for terms that are specific to your area. For more information about glossaries, see [Chapter 10](#).

Bibliography

A bibliography is a list of the sources to which you refer in your manual. Bibliographies follow a specific format for each kind of resource that is cited. A bibliography begins on a right page in a printed manual. For more information, see [Broken Link \(Target ID: SGCONSTR-34411\)](#).

Index

An index is usually required for a manual of more than 20 pages. Indexes begin on a right page in a printed manual. For more information about indexing and index formats, see [Chapter 11](#).

Revision History

The revision history page contains the dates of the current release and all previous releases of the manual. The revision history page begins on a right page in a printed manual. Although this page is usually optional, some writing groups consider this page to be a requirement. Check with your manager or editor to see whether your

manual requires this page.

Guidelines for Documenting Multiple Architectures

This section provides guidelines for documenting products that run on more than one operating system, platform, or address space.

Note – For specific information about documenting multiplatform products in the Solaris Operating System, see the Platform and Address Space Guidelines at <http://infobot.eng/infodev/howto/>.

Readers assume that all information in your book is neutral and applies to them unless you tell them otherwise. Consider the different combinations of operating system, platform, and address space modules you might need to use in your book. The strategy you or your writing group chooses depends on these factors:

- Audience
- Extent of the specific information in the document or documentation set
- Frequency of the information

Content Strategies

If needed, work with an editor or writers in your group to choose one of these strategies for your book:

- **Single operating system or platform document.** A single operating system or platform document includes all pertinent information about a specific operating system or platform. Examples of single operating system documents that pertain to a single operating system include Solaris, Linux, or Microsoft Windows documents. Examples of single platform documents include a SPARC specific document and an x86 specific document that cover a similar topic, or a document that applies to one platform but not to another.

While users might benefit from having information about a single operating system or platform in one place and some redundancy might be omitted, consider the cost of producing, translating, and maintaining single platform or operating system documents.

Use this strategy when the differences between how software runs on different platforms or operating systems are large and pervasive and no alternative is feasible. Also use this strategy when the differences are not extensive but usability is an overriding factor. Easy information retrieval is a consideration for installation documents, for example.

- **Merged document.** A merged document contains both neutral information and information specific to operating systems, platforms, or address spaces. While a merged document might be large, and modularity can lead to redundancy, use this strategy if there is not enough architecture-specific information to warrant separate books. Also use this strategy if users would be inconvenienced by having such information separated from the neutral information.

Writing Documentation for Multiple Architectures

This section presents some best practices for writing documentation for multiple operating systems, platforms, or address spaces.

Try to Write Neutrally

- Rewrite text to combine similar procedures and to avoid duplicating material.
- Only mention operating system, platform, or address space information when it is needed.
- Try to use code variables instead of specific operating system, platform, or address space text in examples.

The use of variables avoids duplicating information.

Modularize Information

- Do not embed operating system, platform, and address space information in neutral text.
 - Incorrect:** You must create slices on the disk. On SPARC based systems, the entire disk is divided into 8 slices. On x86 based systems, the Solaris `fdisk` partition is divided into 10 slices.
 - Correct:** You must create slices on the disk.
 - SPARC: The entire disk is divided into 8 slices.
 - x86: The Solaris `fdisk` partition is divided into 10 slices.
- Make sure that each module makes sense when viewed independently and that text surrounding a module still makes sense if the module is deleted.

Use Text Elements Correctly and Effectively

- If an operating system, platform, or address space topic spans one or two pages, create a separate section and tag it appropriately. If the topic spans several pages, create a separate chapter.
- If similar information is available for the other operating system, platform, or address space, indicate the location with a note, or create a link to the related section or chapter.
 - This section describes how to boot your x86 compatible system. The procedure to boot a SPARC based system is in “SPARC: Booting Your System” on page 64.
- Signal the transition from an architecture-specific section or chapter to neutral information. Write “On all operating systems,” “On all platforms” or “For all address spaces,” as appropriate, at the beginning of the first paragraph of neutral information.

Formatting Architecture-Specific Information

Some authoring tools provide automatic methods to indicate architecture-specific information. If your authoring tool does not provide an automatic method, use the presentation strategies described in this section. For information about specific tagging in the SGML environment, see the latest Platform and Address Space Guidelines at <http://infobot.sfbay/infodev/howto>.

Text elements that are commonly differentiated include the following items:

- **Chapters, sections, and appendixes.** The specific identifier is placed at the beginning of the title in the default font of the title, followed by a colon, for example, “Linux: Libraries.”
- **Notes and Cautions.** The specific identifier is placed before the text, in bold, followed by a space, an en dash, and a space. The identifier takes the place of the usual “Note” or “Caution” introductory text. If your authoring tool produces that text automatically but does not enable you to indicate this type of attribute, you might not be able to accomplish this appearance. For example:

x86 only – A note specific to x86 compatible systems.



Caution (32-bit only) – A caution specific to 32-bit address spaces.

- **Captions.** The specific identifier is placed at the beginning of the caption in the default font of the caption, followed by a colon, for example, “x86: Disk Slices.”
- **Bulleted items.** The specific identifier is placed at the beginning of the list item text in the default font of the list item, followed by a colon, for example, “Microsoft Windows: Bullet item text.”
- **Steps.** The specific identifier is placed at the beginning of the step text in parentheses, for example, **4. (Linux only) Convert GCC to C code.**

Creating Index Entries for Architecture-Specific Information

When creating an index entry, use the subject as the primary entry and the operating system, platform name, or address space as a secondary or tertiary entry as needed. For example:

```
booting
  x86
    32-bit
    64-bit
```

```
disk slices
  SPARC
  x86
```

If this strategy requires more than three levels, put the operating system, platform name, or address space in the primary entry as shown in the following example. Try to avoid this strategy, though, as the key information does not stand out as much.

```
adding a disk on an x86 based system
  booting
  fdisk partition
  creation
  layout
```

Types of Software Manuals

This section briefly describes some of the types of manuals that you might write for a software product. Software documentation usually includes the following types of manuals:

- Installation
- Programmer
- System administration
- User
- Reference
- Java API

Your product team can help you determine which documents are necessary for your particular product.

Installation Guides

Software installation guides explain how to install and configure the software on the user's system. When writing the manual, you must assume that the reader has already assembled the hardware and is awaiting instructions for installing the software.

Programmer's Guides

Software programmer's guides vary in scope, depending on whether you are discussing the programming features of the Solaris operating environment, a language compiler application, or an application programming interface (API). Typical operating system programmer's guides might range from an application packaging developer's guide, which is written for a general audience of applications developers, to a book about writing device drivers, which is directed to highly specialized system programmers.

Programmer's guides explain how to write programs that take advantage of the features of the particular product. Compilers and language-development tools have their own documentation sets that are specifically geared toward programmers who use the tools.

System Administration Guides

System administration guides tell readers how to set up, maintain, and troubleshoot software activities on their computers, and, by extension, networks of their computers. The reader might be anyone from a novice to an experienced network manager.

User's Guides

User's guides tell readers how to use the features of a software product. The guide's complexity depends on how sophisticated readers must be to use the product. You might write your product's user's guide as a tutorial.

Reference Guides

Reference guides give very specific details about a software product, such as syntax statements for programming languages or explanations of each feature of a graphics software package. Usually, the subjects are arranged in alphabetical order. Not all products have reference guides.

Note – Most products include man pages, which are the basic form of reference materials for UNIX operating systems. See “Man Pages” on page 154.

Java API Documentation

Java API documentation describes all of the program elements in a Java platform API library, namely:

- Packages
- Classes
- Interfaces
- Constructors
- Methods
- Fields

Java API documentation is primarily produced for programmers who are writing programs in the Java language. Java API documentation is most commonly generated by using the Javadoc™ tool. For more information, see the Javadoc Tool home page at <http://java.sun.com/j2se/javadoc/>.

Other Product Documents

You might find yourself writing other types of documents. Some of these documents could rightly be considered manuals, but their uniqueness demands special consideration.

These documents include the following:

- White papers
- Online help
- Man pages
- CD text
- Release notes and product notes
- Demos
- Road maps
- Sun BluePrints™ documents

White Papers

White papers are optional documents that are usually used to publicize a new product or a new feature before official documentation is available. You might have the responsibility for editing white papers, and possibly for writing them. Your involvement ensures that all product information is consistent with the product documentation, uses the standard documentation format, and meets company editorial guidelines.

When your manager assigns you to work on a white paper, you might interact with Product Marketing, Engineering, or other consulting groups regarding schedules, customer requirements, and other issues. You can expect to provide several review passes to ensure the proper slant and polish.

Online Help

Online help is information that a computer displays to assist users in doing tasks. Some products might require you to write help text in addition to conventional manuals. Most of these products require you to use compatible help viewers and authoring tools. Check with your program manager for information about online help requirements for your product.

Groups that produce Motif applications that are part of the core Common Desktop Environment (CDE) can use CDE Help.

For information about the JavaHelp™ software, see <http://java.sun.com/products/javahelp>.

Man Pages

Since its creation, the UNIX operating system has been documented in reference materials known as *man pages*, or reference manual pages. Sun continues this tradition by providing man pages for its operating system and associated software. Each man page discusses one subject, which could be a command, library function, file format, or device driver. Man pages also document system information and standards.

A man page concisely answers the question, “What does this thing do?” The man page is not a tutorial on a subject, nor is the man page a technical analysis of the internals. Man pages are used to find information quickly.

Users access man pages online through the man command or a web browser. Customers also receive printed man pages in manuals for individual software products.

When you are writing man pages, remember that they will become part of a much larger reference manual. Many peripheral products and add-in cards require one or more man pages. You must prepare these pages by following some basic rules to ensure that the pages fit smoothly into the larger manual.

Release Notes and Product Notes

Release notes for software products and product notes for hardware products are the final documents that are written before a product ships. The purpose of these notes is to inform the customer about any major problems with hardware, software, or documentation that were discovered after the manuals were printed. Release notes also contain other late-breaking information and additional information needed at installation. In the case of Java releases, release notes discuss problems that were discovered after the manuals were frozen for download bundles.

Release notes might be printed material in product boxes or in ASCII or HTML.

The contents of the notes vary from product to product. For example, if a major problem is discovered with the installation of a software package, then you need to include an "Installation Issues" section in the release notes. Add a "Documentation Issues" section if this problem also affects the manuals.

Additionally, publications departments and individual product teams might add other sections to the notes. The goal of all publications groups is to keep the release notes and product notes as short and succinct as possible.

Release notes might include the following sections:

- Title page
- Legal notice
- Table of Contents
- Preface
- Installation Bugs
- Runtime Bugs
- New Features
- End-of-Support Statements
- Driver Updates
- Patches and CERT Advisories
- Documentation Issues

Product notes might include the following sections:

- Title page
- Legal notice
- Table of Contents
- Preface
- Getting Help
- Compatibility
- Known Problems With the Hardware
- Known Problems With the Software
- Documentation Issues
- Bugs Fixed Since the Last Release

If you are not sure whether your release notes or product notes requires one of these sections, check with your writing manager.

Demos

Demos for Java releases are compiled, working examples that a customer can try out. The demos might be Java applets that run a web browser or applications that run in a shell or from an operating system.

The purpose of some demos is to provide customers with an opportunity to test that the software has been installed properly. Other demos enable a customer to see and try new features.

Demos are usually produced by engineers who write the code for the feature being demonstrated. You might be asked to review the demo, or to write one or more of the following documents:

- README file
- Instructions for loading and running the demo
- An explanation of what the demo is intended to illustrate

Sun BluePrints Documents

Sun BluePrints documents provide best practice solutions for designing, implementing, and managing Sun solutions. The documents range from articles that are posted monthly on the web at Sun BluePrints Online, to books that are published through Sun Microsystems Press. For more information about the Sun BluePrints program, see the Sun BluePrints Program web site.

Training Documents

Training documents are yet another type of technical documentation. Training documents vary widely in format, style, and delivery method, depending on how they are used. For example, a training document that an instructor uses in front of a classroom is different from a training document that a student accesses over the web for self-paced learning.

Typical training documents include the following:

- Training materials for use in instructor-led courses that are delivered in classrooms
These materials might include a student guide, an instructor guide, which consists of the student guide plus additional notes, overheads, workbooks, and study guides.
- Training materials that are delivered on a CD that uses proprietary software
- Training that is delivered over the web and that uses multimedia capabilities

Student Guides and Instructor Guides

Student guides and instructor guides are used in instructor-led training. This type of training typically takes place in a classroom with a group of students. The general editorial format of a student guide resembles the format of a hardware or software manual, except that the information is organized according to modules and learning objectives rather than by chapters. Student guides might include the following components:

- Title page
- Legal notice
- Table of Contents
- Preface
- Modules
- Labs
- Exercises
- Appendixes
- Index

Instructor guides closely resemble student guides, except that the instructor guides contain additional directions and notes for the classroom instructor.

Other Training Documents

Other documents that are used for training purposes might include the following components:

- Study guides
- Student workbooks
- Lab manuals
- Certification exams
- Video or audio presentations
- Technology-based training (TBT) delivered on CD
- Web Learning Center (WLC) classes accessed on the web
- Consulting materials, such as skills assessments or white papers

alpha Composed November 11, 2005

Checking and Reviewing Your Document

Writing computer documentation involves converting raw information from engineers and marketing professionals into a useful, well-written document.

Types of Editing

A document could undergo more than one editorial review, each for a different purpose. The type of edit that a document receives usually depends on where the document is in the product cycle. For example, a *developmental edit* of a document occurs early in the cycle, around the pre-alpha test or alpha period when there might be more time to address issues such as organization and structure. A *copy edit* is best during the beta review, when the manual is more complete and stable. And finally, *proofreading* is the last review a document receives.

Developmental Editing

Developmental editing is hard to define because its functions depend on the documentation set or book under consideration. Think of developmental editing as a document production phase that assesses the document's overall focus and direction. This edit is the phase when a documentation set or a book is restructured, chapters or sections are reorganized, and major rewriting is done. The issues that the editor raises during a developmental edit can affect the character of subsequent sections or chapters of a document. This effectiveness is increased if the edit is done on a sample chapter or an early draft of a manual. Some global copy editing issues can be raised at this time as well, especially when these issues provide the writer with examples of style or word usage.

Developmental Editing Checklist

Structure and Organization

- Audience definition, purpose of document, and how to use the book are clear.
- Information is appropriately presented for the audience.
- Concepts flow logically.
- Superfluous or redundant material is eliminated.
- Headings are useful, descriptive, and specific.
- Information is easy to find.
- Information is task oriented where appropriate.
- Reference and conceptual information are eliminated from task descriptions.
- Distinctions between parts and chapters are clear.
- Page numbering scheme is appropriate for the type of book.

Writing

- Reader context is established and reinforced.
- Tone is appropriate for the reader and to the focus of the book.
- Critical information is covered clearly.
- Task-oriented writing is clear. User actions and system actions are distinct.
- Assumptions are clearly supported.
- Writing and layout are optimized for online presentation.

Style

- Terms are used consistently and appropriately.
- Terms are defined and used in context correctly.
- Terms and abbreviations avoid jargon and follow guidelines for localization.
- Documentation set conventions are established and followed.

Formatting and Layout

- Document conforms to publications standards.
- Standard templates and formats are used.

Illustrations

- Illustrations appear where needed.
- Artwork is integrated within the text.
- Tables, figures, and illustrations are used effectively and appropriately.

- Illustrations follow artwork and localization guidelines.

New Elements

- New graphics or presentation techniques are identified and used effectively.
- Innovations meet Sun design and usability standards.

Copy Editing

Issues regarding structure and organization are addressed throughout the developmental edit.

Copy Editing Checklist

Readability

- Sentences are clear, direct, and concise.
- Repetition is used effectively.
- Parallel structure is used effectively.

Style

- Headings, lists, and sentences have parallel construction.
- Headings follow hierarchy guidelines.
- Voice and tone are consistent.

Transitions

- Text is easy to follow.
- Information is complete and appropriately placed.
- Transitions between parts, chapters, and sections are clear.
- Transitions are effective online and in hard copy.
- Cross-references are correct, worthwhile, and sufficient.

Grammar

- Sentences are complete.
- Subjects and verbs agree, and pronouns and antecedents agree.
- Verb tense is consistent.

- Modifiers are used appropriately.
- Word choice and sentence structure follow guidelines for localization.
- Long sentences are divided for readability and localization.

Punctuation, Capitalization, and Spelling

- Punctuation follows editorial and documentation set guidelines.
- Capitalization follows editorial and documentation set guidelines.
- Spelling follows editorial and documentation set guidelines.

Mechanics

- Typeface conventions are followed in all document elements.
- Product names are used correctly and consistently.
- Trademarks are used correctly and include appropriate attributions.
- New terms are defined and appear in a glossary if there is one.
- Abbreviations and acronyms follow editorial and localization guidelines.
- Numbers and symbols follow editorial and localization guidelines.
- Cross-references are punctuated correctly and refer to the intended target.
- Numbered lists and steps are used appropriately and are numbered correctly.
- Figures, tables, and examples are referred to in preceding text.
- Table continuations are noted correctly.
- Notes, Cautions, and Tips are used correctly.
- Footnotes are used correctly.
- Running footers and page numbers are correct.

Formatting and Layout

- Document conforms to style standards.
- Standard templates and formats are used.
- Page breaks and line breaks are effective.
- Page numbering scheme is appropriate for the type of book.

Illustrations

- Illustrations are consistent and sized appropriately throughout the book.
- Illustrations follow artwork and localization guidelines.
- Figure callouts are capitalized correctly and are in the correct font.

Proofreading

Proofreading is the last step that writers and editors can take to ensure further quality. Proofreading involves one final scan of the document for errors that might have been overlooked in previous reviews. The writer also might have introduced errors when

incorporating new technical material or editorial comments. The proofreader's primary responsibility is to make sure that typographical errors, incorrect font usage, and formatting mistakes have not crept into the document.

Proofreading Checklist

Front Matter

- Title page shows correct title.
- Legal notice is current and trademarks, including third-party ones, are listed.
- Table of contents includes correct headings and page number references, and is formatted correctly.
- Figures, tables, and examples are listed in the front matter.
- The preface uses the correct template and contains correct chapter numbers, descriptions, and any required product-specific information.
- Run your document through a spelling checker.
- Run your document through a lint program if such a program exists for your authoring environment.
- Check cross-references.
- Include illustrations or indicate placement of illustrations.

Back Matter

- Appendixes are in the correct order.
- Templates and formats are used correctly in appendixes and glossaries.
- Glossary is correctly presented.
- Bibliography is correctly presented.
- Index is formatted correctly and contains no errors.

Grammar

- Sentences are complete.
- Subjects and verbs agree, and pronouns and antecedents agree.
- Verb tense is consistent.
- Modifiers are used appropriately.

Punctuation, Capitalization, and Spelling

- Punctuation follows editorial and documentation set guidelines.
- Capitalization follows editorial and documentation set guidelines.
- Spelling follows editorial and documentation set guidelines.

Mechanics

- Typeface conventions are followed in all document elements.
- Product names are used correctly and consistently.
- Trademarks are used and attributed correctly.
- New terms are italicized, defined, and appear in a glossary, if there is one.
- Abbreviations and acronyms follow editorial and localization guidelines.
- Numbers and symbols follow editorial and localization guidelines.
- Cross-references are punctuated correctly and refer to the intended target.
- Numbered lists and steps are used appropriately and are numbered correctly.
- Figures, tables, and examples are numbered correctly.
- Table continuations are noted correctly.
- Footnotes are used correctly.
- Page footers and numbers are correct.
- Change bars do not appear.

Formatting and Layout

- Document conforms to publications standards.
- Standard templates and formats are used.

Illustrations

- Figure callouts are capitalized correctly and are in the correct font.
- Artwork is aligned correctly on the pages.

Creating a Style Sheet

Maintaining a *style sheet* can help you keep track of special spellings, terminology, punctuation, capitalization, and other document-specific words or formats.

A style sheet is where you can log the decisions made about product names, numbers, abbreviations and acronyms, hyphenation, and capitalization. If the document that you are writing or editing is part of a set, using a style sheet helps maintain consistency among the various books.

When you create a style sheet, remember to pass it on to others who might benefit from it. These people might include writers of related documents, editors, illustrators, and production specialists.

For a sample style sheet form, use the “[Editorial Style Sheet](#)” on page 165, or obtain the form at http://webhome.sfbay/pubs_info/Int/editforms.html.

Editorial Style Sheet

Document title:

Project:

Writer:

Editor:

Date:

A B C	D E F	G H I
J K L	M N O	P Q R
S T U	V W X	Y Z Numbers

Cover capitalization, spelling, hyphenation.

(n) noun

(v) verb

(a) adj preceding noun

(pa) predicate adjective

(col) collective noun

(s) singular

(pl) plural

(TM) trademark

(R) registered trademark

Abbreviations

Trademarked Terms

Special Font Conventions

Miscellaneous Notes

Writing Alternative Text for Nontext Elements

This chapter describes how technical writers can create documents that meet one of the key Section 508 accessibility requirements. This key requirement is to create text equivalents, referred to as *alternative text*, for each graphic element in the document. This chapter explains how to write alternative text, but it does not provide tool-specific information.

This chapter discusses the following topics:

- [“Section 508 Requirements Overview” on page 167](#)
- [“Guidelines for Meeting Section 508 Requirements” on page 168](#)
- [“General Guidelines for Writing Alternative Text” on page 169](#)
- [“Writing About Nontext Elements” on page 171](#)

Section 508 Requirements Overview

United States government purchases of information technology are required by federal law to be accessible by people with disabilities. Examples of disabilities include vision impairment, hearing impairment, and so on. Requirements focus on the need for assistive technologies that enable people with disabilities to use software products and to get the full benefit from documentation.

Assistive Technologies

To meet Section 508 accessibility requirements, documentation must provide support for assistive technology tools that enable specialized input and output capabilities.

Examples of assistive technology tools include the following:

- **Screen reader.** This tool enables vision-impaired users to navigate through applications, determine the state of controls, and “read” text by using text-to-speech conversion.
- **Screen magnifier.** This tool enables users to enlarge the screen display.
- **Voice command and control.** This tool enables users to control the system by using spoken commands.

Guidelines for Meeting Section 508 Requirements

Writers can ensure that documents meet Section 508 accessibility requirements by providing alternative text to describe nontext elements, which include graphics, mathematical equations, and multimedia. Follow these basic guidelines:

- Identify the nontext elements that are included in a document.
- Create short alternative text for each nontext element.
Short alternative text, which *cannot* exceed 150 characters, is required for each nontext element. This text enables assistive access tools to “read” the nontext element.
- Create long alternative text for select nontext elements, only if necessary.
Sometimes, a nontext element cannot be adequately described in fewer than 150 characters. In such cases, long alternative text, which can exceed 150 characters, can be used in conjunction with short alternative text. Long alternative text *must* be accompanied by short alternative text.
- If necessary, use tools to export or convert the document to HTML.

General Guidelines for Writing Alternative Text

Document accessibility is addressed by providing alternative text descriptions for nontext elements. When writing alternative text, do the following:

- Describe callouts and other relevant information in a logical order.
- Use the same style guidelines that you use for the rest of the document.
- Do not add HTML tags, FrameMaker character styles, or markup of any kind to alternative text.

Specific formatting is not interpreted in alternative text, so such markup appears as-is.

- Identify the graphic type prominently in the alternative text, namely at the beginning or at the end, but not in the middle.
- If the *only* occurrence of a trademarked term appears in the alternative text, append (TM) to the term.

Do not mark the occurrence in the alternative text if the trademarked term is used elsewhere in the body of the document.

The first step in providing alternative text is to determine the context of the nontext element.

Determining the Context of a Nontext Element

The existence and amount of context that a nontext element has in the surrounding text can help you determine the following:

- How much alternative text to write
- What kind of alternative text to write

Look at each nontext element and the context that surrounds it. The context usually appears within the same section as the element. The three main context levels are defined as follows:

- **Existing context.** A description of the nontext element or its purpose appears in the body of the document.

Provide short alternative text for this context level, as described in [“Writing Short Alternative Text” on page 170](#).

- **Limited existing context.** A limited description of the nontext element or its purpose appears in the body of the document.

Provide short alternative text for this context level, as described in [“Writing Short Alternative Text” on page 170](#).

- **No existing context.** No description of the nontext element appears in the body of the document and the purpose of the nontext element is unclear.

Determine whether the nontext element serves a useful purpose in the document. If the nontext element serves no useful purpose, remove the element from the document.

If the element serves a useful purpose, provide short alternative text as described in [“Writing Short Alternative Text” on page 170](#). If you consider long alternative text to be necessary, see [“Writing Long Alternative Text” on page 171](#).

Note – If your document is early enough in the production cycle, consider adding contextual text for the nontext element in the body of the document. The description will then be available to regular readers as well as those readers who are accessing alternative text.

Writing Short Alternative Text

You must write short alternative text for every nontext element. Such text is the value of the `ALT` attribute of the `` tag. Conversion tools for several authoring environments make this change for you when converting from other formats to HTML. Short alternative text cannot exceed 150 characters.

This text provides a brief description of one of the following:

- What the nontext element represents
- What the nontext element looks like
- What purpose the nontext element serves in the document

Avoid duplicate information, irrelevant details, or inconsistent terminology.

Tip – To count characters on a Solaris 8 system, select the passage in the document. Then, type the following in a terminal window:

```
$ xv_get_sel | wc -c
```

To count characters on other versions of the Solaris Operating System, copy the text. Then, type the following:

```
$ echo paste-highlighted-text | wc -c
```

Writing Long Alternative Text

Note – Long alternative text is not supported by all authoring tools and browsers. Even when supported, long alternative text is available only to users who use screen readers.

You can optionally use long alternative text to provide very detailed descriptions of nontext elements. Complex graphics, diagrams, and flow diagrams might be good candidates for long alternative text. The long alternative text is placed in a separate file. The name of this file is the value of the `LONGDESC` attribute of the `` tag.

The alternative text examples that appear in [“Complex Graphics” on page 174](#) and in [“Diagrams” on page 177](#) include examples of long alternative text.

You write long alternative text just as you write short alternative text, but long alternative text can exceed the 150-character limit.

Writing About Nontext Elements

Despite the visual differences, you use the same writing guidelines to describe most nontext elements. This section includes writing guidelines for the following graphic types:

- [“Simple Graphics” on page 172](#)
- [“Complex Graphics” on page 174](#)
- [“Diagrams” on page 177](#)
- [“Mathematical Equations” on page 181](#)
- [“Multimedia Content” on page 182](#)

Tip – Avoid terms such as “annotation,” “blowup,” and “exploded view” in alternative text. Such terms rarely provide information relevant to the alternative text.

The examples in the following subsections show graphics in isolation along with alternative text. The descriptions of the type of context identified in the Notes column of the example tables use these terms:

- **Existing context assumed.** The nontext element might clarify the information presented or might add visual interest to a document. Alternative text requirements can be satisfied with minimal text.
- **Limited existing context assumed.** The nontext element might clarify the information presented. Provide more detail about the content of the nontext element if the details are not available in the existing context. Alternative text requirements might be minimal or extensive.
- **No existing context assumed.** The nontext element is vital to the understanding of the information presented, but it is not described by existing context. Alternative text requirements can only be satisfied by extensive text.

Note – If your document is early enough in the production cycle, consider adding contextual text for the nontext element in the body of the document. The description will then be available to regular readers as well as those readers who are accessing alternative text.

Most of the examples show alternative text for all three contexts. These variations are numbered, and character counts for each version are provided in the adjacent Notes column.

Simple Graphics

Simple graphics usually represent single entities, such as symbols, logos, icons, and figures. *Symbols* are graphics that represent functions or operations. *Logos* are graphics that identify a company or product. *Icons* are graphics that represent applications or functions within an application. Symbols, logos, and icons are not commonly accompanied by captions. They might be separated from the document text or placed within a sentence as an inline graphic.

Symbols and icons might be *static* or *dynamic*. A static symbol or static icon is used only as an illustration. A dynamic symbol or dynamic icon might be used as a button or link to perform another task. For example, a dynamic symbol might be used to launch a multimedia application.

When writing alternative text for simple graphics, follow these guidelines:

- Identify the graphic as a symbol, logo, icon, or figure.
- Describe the purpose of the graphic.
For example, explain an icon's state as active or inactive.
- Provide only a name for common symbols, logos, and icons.
Provide more detail for uncommon graphic elements.

EXAMPLE 9-1 Simple Graphics Text Equivalents

Simple Graphics	Notes
	Short alternative text: 12 characters.
SCSI symbol.	
	Short alternative text: 52 characters.
Sun Creator3D system logo for Ultra 1 workstations.	
	Short alternative text: 14 characters.
Netscape icon.	
	Short alternative text: 64 characters.
Figure showing Start, Stop, and Reset buttons on the Main window.	

Complex Graphics

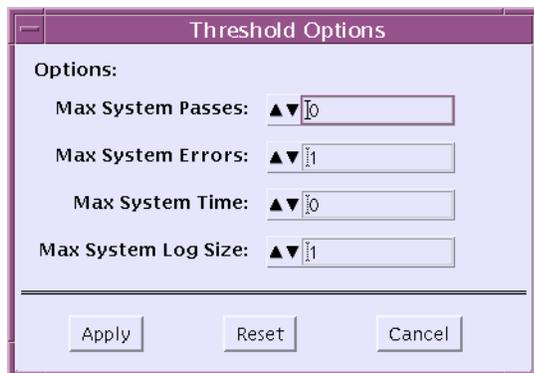
Complex graphics present more complex ideas by means of screen captures and technical illustrations. Such graphics are sometimes accompanied by a figure caption. Complex graphics can be cropped, contain callouts, be annotated, show action, be exploded views, or show cut-away views.

When writing alternative text for complex graphics, follow these guidelines:

- Identify the graphic as a screen capture or figure.
- Include information about callouts, if applicable.
- Describe the purpose of the graphic.
For example, explain the fields displayed.
- Describe the information in a logical order, if possible.
For example, describe elements from top to bottom and left to right.

The following examples provide samples of accessibility text for complex graphics. The sample nontext element is followed by a table. The first column in the table shows the associated alternative text for the nontext element. The second column provides notes about the alternative text.

EXAMPLE 9–2 Screen Capture With No Figure Caption



Alternative Text	Notes
(1) Screen capture of the Threshold Options dialog box.	(1) Existing context assumed. Short alternative text: 51 characters.

Alternative Text	Notes
(2) Screen capture of Threshold Options dialog box showing Max System Passes, Errors, Time, and Log Size options. Buttons are Apply, Reset, and Cancel.	(2) Limited existing context assumed. The short alternative text does not mention the default values of the options because, in this case, that information is described in the text. Short alternative text: 147 characters.
(3a) Screen capture of the Threshold Options dialog box.	(3) No existing context assumed. Could not list all of the options and buttons without exceeding the 150-character limit, so long alternative text was added.
(3b) The Threshold Options dialog box has four options and three buttons. The first option is Max System Passes, which has a default value of 0. The Max System Errors option has a default value of 1. The Max System Time option has a default value of 0. The last and fourth option, Max System Log Size, has a default value of 1. The buttons are Apply, Reset, and Cancel.	(a) Short alternative text: 51 characters. (b) Long alternative text: 365 characters.

Tip – Some screen readers read the figure caption before they read the alternative text, while others read the caption after the alternative text. Be aware of how the alternative text would sound if read before and after the caption to avoid confusing, unintentionally funny, or embarrassing word combinations.

EXAMPLE 9-3 Composite Screen Capture With Figure Caption

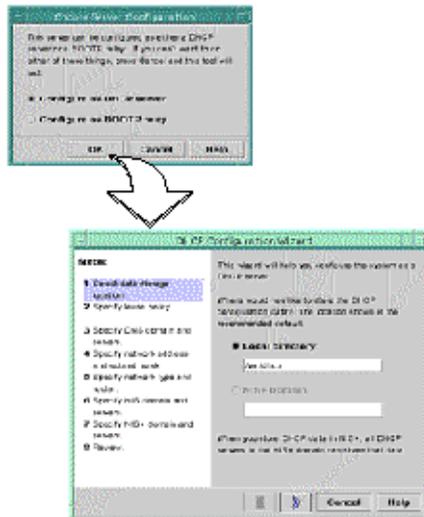


FIGURE 2-3 Opening the DHCP Configuration Wizard

Alternative Text	Notes
(1) Screen capture showing the Choose Server Configuration dialog box opening the DHCP Configuration Wizard.	(1) Existing context assumed. Short alternative text: 104 characters.
(2) Screen capture showing the Choose Server Configuration window, with Configure as DHCP Server and OK buttons selected, opening the DHCP Config Wizard.	(2) Limited existing context assumed. Short alternative text: 149 characters.
(3a) Screen capture showing the Choose Server Configuration dialog box opening the DHCP Configuration Wizard.	To keep the number of characters below 150, "Configuration dialog box" has been replaced with the term "Configuration window." In addition, "DHCP Configuration Wizard" has been replaced with the term "DHCP Config Wizard."
(3b) Selecting the Configure as DHCP Server button and then clicking the OK button on the Choose Server Configuration dialog box opens the DHCP Configuration Wizard dialog box.	(3) No existing context assumed. Could not describe the action without exceeding the 150-character limit, so long alternative text was added.
	(a) Short alternative text: 104 characters.
	(b) Long alternative text: 171 characters.

EXAMPLE 9-4 Annotated Technical Illustration

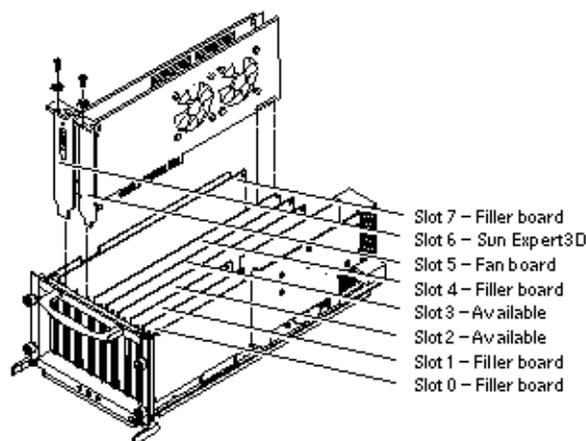


FIGURE 2-4 Slot Locations in a Sun Fire 6800 I/O Assembly

Alternative Text	Notes
(1) Figure showing Sun Fire(TM) 6800 I/O assembly slots and the boards that fill them.	(1) Existing context assumed. Short alternative text: 82 characters.
(2) Figure showing Sun Fire(TM) 6800 I/O assembly slots and the boards that fill them: Slot 6 has a Sun Expert3D card, and Slot 5 has a fan board.	(2) Limited existing context assumed. Short alternative text: 142 characters.
(3a) Figure showing Sun Fire 6800 I/O assembly slots and the boards that fill them.	(3) No existing context assumed. Could not describe the boards and slots without exceeding the 150-character limit, so long alternative text was added. (a) Short alternative text: 78 characters. (b) Long alternative text: 316 characters.
(3b) Figure showing which boards must fill the Sun Fire 6800 I/O assembly's seven slots: Slot 0 and Slot 1 are filled with filler boards. Slot 2 and Slot 3 are available for miscellaneous cards. Slot 4 has a filler board. Slot 5 has a fan board. Slot 6 contains the Sun Expert3D card. Slot 7 has another filler board.	
	In the long alternative text, the boards are listed in slot order from lowest to highest. The boards are also listed in a consistent manner, to make the information easier to follow for readers who are using assistive technology tools.

Diagrams

A *diagram* is a line drawing that shows the interrelationship of objects. A *flow diagram* is a diagram that presents information in a specific order. Many diagrams cannot be adequately described by short alternative text alone. Such diagrams can be accompanied by optional long alternative text *in addition to* the required short alternative text.

When writing alternative text for diagrams, follow these guidelines:

- Identify the graphic as a diagram or a flow diagram.
- Describe the purpose and major components of the diagram.
 - If the components are labeled, use the labels. If the components are important but not labeled, describe them.
- Do not describe aspects of the diagram that are not relevant to understanding the diagram.
 - For instance, the size or shape of a component in the diagram is usually irrelevant.

EXAMPLE 9-5 Standard Diagram

EXAMPLE 9-5 Standard Diagram (Continued)

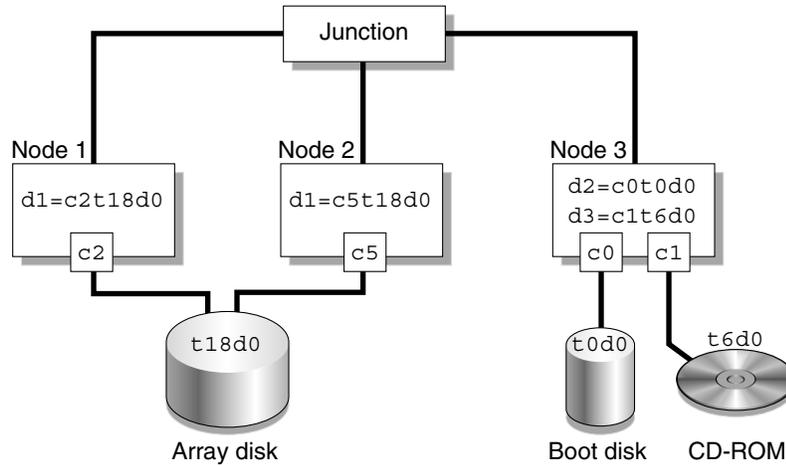


FIGURE 2-5 DID Numbering for a Three-Node Cluster

Alternative Text	Notes
(1) Diagram showing device ID numbering for a three-node cluster.	(1) Existing context assumed. Short alternative text: 61 characters.
(2) Diagram showing device ID numbering for a three-node cluster: Node 1 is d1=c2t18d0. Node 2 is d1=c5t18d0. Node 3 is d2=c0t0d0 and d3=c1t6d0.	(2) Limited existing context assumed. Short alternative text: 143 characters.
(3a) Diagram showing device ID numbering for a three-node cluster.	(3) No existing context assumed. Could not describe the diagram without exceeding the 150-character limit, so long alternative text was added.
(3b) Diagram showing device ID numbering for a three-node cluster. Array disk connects to Node 1 and Node 2. Both the boot disk and the CD-ROM connect to Node 3. Node 1, Node 2, and Node 3 all connect to the Junction. Array disk value is t18d0, boot disk value is t0d0, and CD-ROM value is t6d0. Node 1 value is d1=c2t18d0. Node 2 value is d1=c5t18d0. Node 3 values are d2=c0t0d0 and d3=c1t6d0.	(a) Short alternative text: 61 characters. (b) Long alternative text: 390 characters.

EXAMPLE 9-6 Complex Diagram

EXAMPLE 9-6 Complex Diagram (Continued)

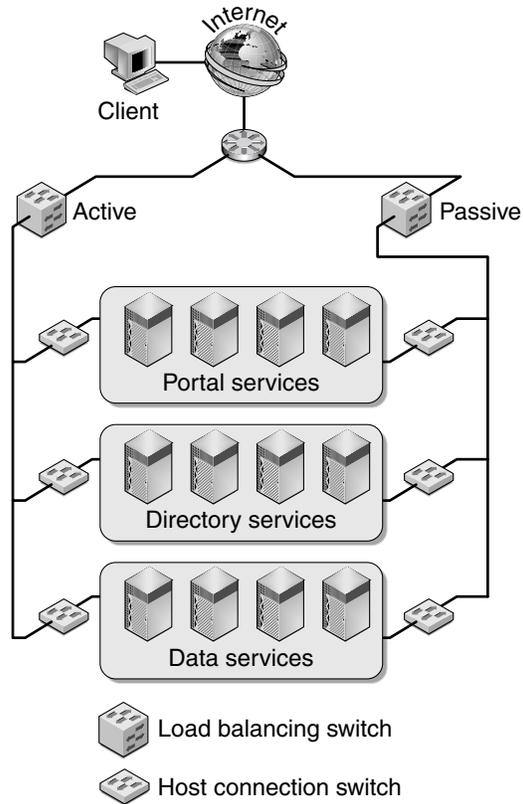


FIGURE 2-6 Service Delivery Network Components

Alternative Text	Notes
(1) Diagram showing components of the service delivery network.	(1) Existing context assumed. Short alternative text: 59 characters.
(2) Diagram showing active and passive load balancing switches connecting through host connection switches to portal, directory, and data services.	(2) Limited existing context assumed. Short alternative text: 143 characters.

Alternative Text	Notes
(3a) Diagram showing components of the service delivery network.	(3) No existing context assumed. Could not describe the details of the diagram without exceeding the 150-character limit, so long alternative text was added.
(3b) Host connection switches connect portal, directory, and data services to two load balancing switches. One load balancing switch is active. The other is passive. The load balancing switches, in turn, connect to a router that connects the entire service delivery system to the Internet. The client system connects directly to the Internet.	(a) Short alternative text: 59 characters. (b) Long alternative text: 339 characters.

EXAMPLE 9-7 Flow Diagram

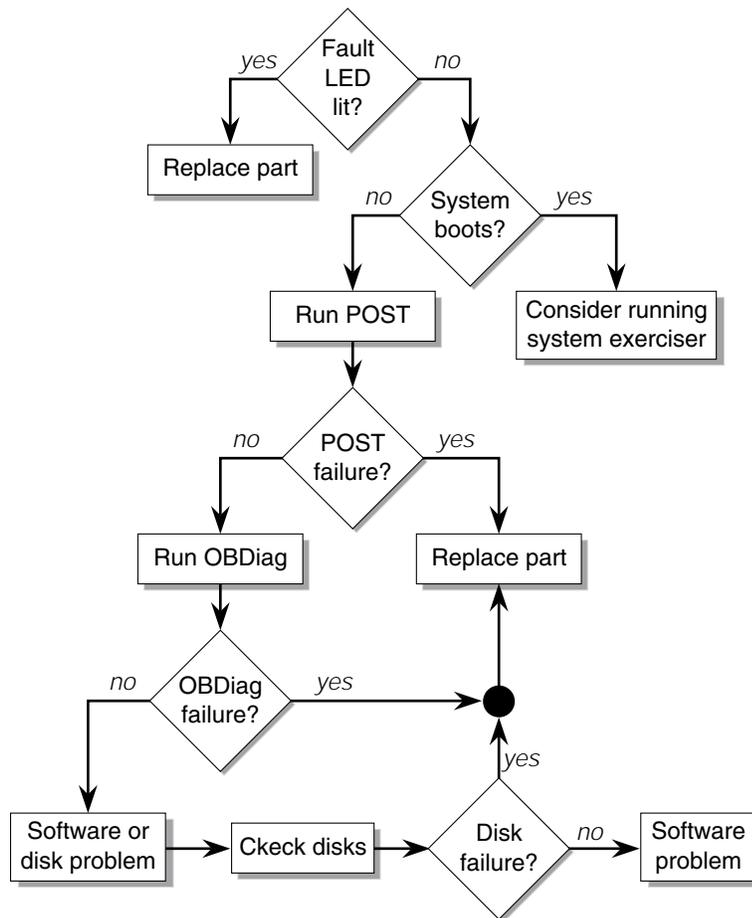


FIGURE 2-7 Choosing a Tool to Isolate Hardware Faults

Alternative Text	Notes
(1) Flow diagram showing the process of fault isolation.	(1) Existing context assumed. Short alternative text: 52 characters.
(2a) Flow diagram showing the process of fault isolation.	(2) No existing context assumed. Could not describe the flow diagram without exceeding the 150-character limit, so long alternative text was added.
(2b) Flow diagram showing fault isolation. If the Fault LED is lit, you must replace the part. If not, determine if the system boots. If the system boots, consider running system exerciser. If the system does not boot, run POST. If POST fails, replace the part. If POST succeeds, run OpenBoot(TM) Diagnostics (OBDDiag). If OBDDiag fails, replace the part. If OBDDiag succeeds, you must check the disks for disk failure. If a disk failure occurred, replace the part. If no disk failure occurred, then software is the reason for the fault.	(a) Short alternative text: 52 characters. (b) Long alternative text: 530 characters. The shape of the figures in the flow diagram are omitted because decisions are dealt with in the text. The first occurrence of the trademarked term appears in alternative text, so it is marked with (TM).

Mathematical Equations

Many complex mathematical equations defy simple translation into words. To satisfy Section 508 requirements, describe the equation as a mathematical equation or as a graphic that shows a mathematical equation.

When writing alternative text for mathematical equations, follow these guidelines:

- Use the generic alternative text “Mathematical equation” or “Graphic showing mathematical equation” to describe the equation.
- Describe the purpose of the equation as if you were writing a caption title for the equation.

EXAMPLE 9-8 Mathematical Equations

Mathematical Equations	Notes
$\text{allocation}_{\text{project } i} = \frac{\text{shares}_{\text{project } i}}{\sum_{j=1 \dots n} (\text{shares}_{\text{project } j})}$	Short alternative text: 39 characters.
j is the index among all active projects	
Graphic showing mathematical equation.	
$\text{allocation}_{\text{project } x} = \frac{\text{shares}_{\text{project } x}}{\sum_{j=1 \dots n} (\text{shares}_{\text{project } j})}$	Short alternative text: 149 characters.
j is the index among all active projects that run on processor set X	
Mathematical equation shows formula for how FSS scheduler calculates per-project allocation of CPU resources for projects running on processor sets.	

Multimedia Content

Multimedia content presents information in a combination of media formats, which can include audio, video, animation, and text. Multimedia content usually supplements written material. For example, a remove-and-replace service procedure for a hardware component might also serve as the basis for a scripted video or animation of that procedure. Alternative text is not needed if the material is presented in the surrounding text. However, alternative text must still be provided for the multimedia icon.

The first use of a multimedia icon in a document is usually as a static icon in the preface. This first use of the graphic introduces the concept of multimedia links that appear later in the text. See [“Simple Graphics” on page 172](#) for examples of static icons.

When writing alternative text for multimedia content, follow these guidelines:

- Identify the graphic as a multimedia icon that has an underlying link.
- Describe the specific type of multimedia presented, for example, a movie or an audio file, and its purpose.
- Include the name of the movie or audio file.
- Provide a transcript of the audio, video, or animation content if that information is not already covered in another way in the document.

For example, if closed captioning or audio descriptions are provided, a transcript is not required.

EXAMPLE 9-9 Multimedia Icons



Alternative Text	Notes
(1) Multimedia icon that can be selected to view a ShowMe How video demonstration of the "Removing the Power Supply" procedure.	(1) Existing context assumed. Gives the name of the movie. Short alternative text: 123 characters.
(2) Multimedia icon that can be selected to view a ShowMe How video demonstration of the psupply.mpg file.	(2) Existing context assumed. Gives the name of the movie file rather than the movie title. Short alternative text: 103 characters.

alpha **Composed November 11, 2005**

Glossary Guidelines

This chapter explains how to create a glossary for a technical manual. Most technical manuals increasingly introduce a number of new terms. A glossary improves the usability of a technical manual by simplifying a reader's search for definitions for these new terms. Before you create a glossary, consider its use and organization.

This chapter discusses the following topics:

- ["Glossary Content" on page 185](#)
- ["Writing Good Glossary Entries" on page 187](#)

Glossary Content

The terms that you select for a glossary must be important to the subject, with simple and concise definitions that are appropriate for the context. A glossary can contain some background definitions that are not defined within your book if these definitions enhance understanding of the subject. An example is units of measure.

A glossary can also include terms that have another meaning apart from technology. Examples are "front porch" and "portal." You might also include terms that are unique to the book.

Some terms are not considered appropriate for a glossary. These terms include the following:

- Commands from a programming language or from an operating system
- Window menu selections
- Terms that a reader can find in a standard dictionary or an industry glossary

Certain UNIX commands have mutated into multiword terms. These terms are therefore candidates for inclusion. For example, the UNIX `tar` command has encouraged the use of “tar” as an adjective. The glossary might contain an entry for “tar file,” but not for the `tar` command. You must decide whether to include in your glossary similar UNIX commands that have mutated into common multiword terms.

Finding Definitions

The online Sun corporate glossary gathers terms from each segment of the company. For a list of current terms and definitions, see the *OpenSolaris Glossary* at <http://opensolaris.org/os/community/documentation/glossary>.

For terms that are specific to your particular area, try to obtain definitions from your technical subject matter expert. For standard industry terms, first check a standard dictionary. If the term is not in this dictionary, check the third-party reference books that are listed in Appendix B.

Online glossaries are usually easy to access. You might find the definition that you need without much difficulty. Check the following glossaries:

- *Glossary of Java Technology-Related Terms* at <http://java.sun.com/docs/glossary.html>
- *Sun Global Application Developer Corner Glossary* at <http://www.sun.com/developers/gadc/glossary/index.html>



Caution – If you need to borrow definitions from another source, ensure that you rewrite the definitions so that you do not copy text from a third-party publication. To inspire originality, define a term as if you were creating a definition for someone who is unfamiliar with the term or technology.

Ensure that your glossary is verified in a technical review, along with your main text.

Creating New Terms

If you need to create an entirely new term for a name in a new product, follow these guidelines:

- Ensure that the new term can be pronounced as you intend.
If you have any doubts, use a different term. An example is “invalid,” which can be pronounced two ways with two different meanings.
- Ensure that the new term cannot be read as obscene and that the term’s meaning cannot be mistaken.
- Ensure that a translator can adequately translate the new term.

If you are not sure about a term and its definition, consult the Localization Department.

Formatting a Glossary

Glossary page formats differ from book to book. You can see these differences especially in Internet glossaries, which use a variety of publishing software for their online presence. All glossaries do have some common characteristics:

- All terms are arranged alphabetically.
- Each term begins on a separate line.
- Each term is followed by its definition or expansion.

Terms often follow the capitalization that is recognized by a standards organization, such as ANSI, IEEE, or ISO. The typeface, margins, and indents are determined by the templates and the publishing software that you use to create the glossary.

Writing Good Glossary Entries

Ideally, you define each new term at least three times:

1. At its first usage in text
Give a brief but concise definition of the term.
2. At its first usage in a subsequent chapter if the book is hard copy only
Here, a short, summary definition suffices.
3. In the glossary
Users expect a complete definition in the glossary.

The best time to write a glossary entry is when you first introduce an unfamiliar term in your text.

Creating a Glossary Entry

Glossary style usually presents the glossary term in a simple, singular noun form. The part of speech that you use for the term demands that you use the same part of speech as a keyword in the definition. An example follows.

concatenate (v.) To string together two or more sequences, such as files, into one longer sequence. The UNIX `cat` command, for example, concatenates files.

node (n.) An addressable point on a network. Each node in a network has a different name. A node can connect a computing system, a terminal, or various other peripheral devices to the network.

Defining the Term

The definition, which immediately follows the term, does not restate the term. The restatement might be assumed, along with the unwritten words “is a” or “is,” if the article is included. An example follows.

debugger (n.) A program that locates operational errors in another program. The debugger usually enables the developer to examine the malfunctioning portion of the program for bad data and to check operational conditions. See also debug.

decryption (n.) The process of converting encrypted data to plain text. See also encryption.

Ensure that the definition agrees in number with the term. The definition does not need to be a complete sentence.

Defining Multiword Terms

Defining a term that consists of multiple words, usually one or more modifiers and a noun, is similar to defining a single word. An example follows.

shell procedure (n.) An executable file that is not a compiled program. A shell procedure calls a shell to read and execute commands that are contained in a file. This procedure enables you to store a sequence of commands in a file for reuse. Also called a shell program or command file.

Defining Parts of Speech

Identify each part of speech for the term. Of all glossary users, translators and nonnative speakers can benefit the most from knowing the part of speech for a term. However, all users can improve their understanding of a term by knowing how to use that term in a sentence. The following table shows the abbreviations for parts of speech.

TABLE 10-1 Abbreviations for Parts of Speech

Abbreviation	Part of Speech
adj.	Adjective

TABLE 10–1 Abbreviations for Parts of Speech *(Continued)*

Abbreviation	Part of Speech
adv.	Adverb
n.	Noun
v.	Verb

The following example shows two parts of speech:

- format** (1) (n.) The structure of data that is to be processed, recorded, or displayed.
- (2) (v.) To put data into a structure or to divide a disk into sectors for receiving data.

Creating Multiple Definitions

When a term requires more than one definition, use a numeral that is surrounded by a set of parentheses and no other punctuation. Append a space to this text. Start a new paragraph for each definition, as the following example shows.

- luminance** (1) (n.) The generic flux from a light-emitting or light-reflecting surface. The subjective response to luminance is brightness.
- (2) (n.) The specific ratio of color primaries that provides a match for the white point in a specified color space.
- (3) (n.) The portion of a composite signal that carries brightness information.

Defining Acronyms and Abbreviations

Acronyms and abbreviations are alphabetized **letter-by-letter**, as described in **Broken Link (Target ID: SGGLOSS-23)**. Occasionally, you need only give an expansion of the term. At other times, you need to provide a definition as well.

Because most users are familiar with just the acronym or abbreviation, spell out the meaning and give the definition immediately after the acronym or abbreviation. You can double-post the abbreviation and the expansion.

The following examples show entries with abbreviations and expansions.

- SIP** (single inline package) (n.) The packaging of an electronic component with all leads protruding from one side only.
- SMPTE** (n.) Society of Motion Picture and Television Engineers.

SNMP (Simple Network Management Protocol) (n.) The preferred network management protocol for TCP/IP-based internets.

When you use multiple definitions for an acronym or abbreviation, use a numbering system, as the following example shows.

BSD (1. Berkeley Software Distribution) (n.) UNIX versions that were developed at the University of California, Berkeley. These versions have names such as BSD 2.7 and BSD 4.2.

(2. block schematic diagram) (n.) A circuit board flowchart.

Note – If an acronym or abbreviation that is expanded in your book chapter contains initial capital letters, ensure that you repeat the capitalization in the glossary.

Using “See” and “See Also” References

When you refer to another term, use the word “See” to direct the reader to use another word. Do not define the term when you use “See.”

solid model (n.) See surface model.

Use “See also” after you have defined a term to direct the reader to other terms with similar meanings. If you are referring to an acronym or abbreviation, use the short form. The following examples show two ways to use “See also.”

composite drive (n.) A single logical drive that is composed of more than one physical drive. See also disk array, RAID.

crontab file (n.) A file that lists commands which are to be executed at specified times on specified dates. See also cron.

Indexing

An index is often a reader's primary information retrieval device. When readers search for a particular topic and find it referenced in an index, they are assured that the topic is covered in the document and their search has ended. When readers do not find a topic in an index, they might decide that the topic is not covered in that document and they might look elsewhere.

This chapter discusses the following topics:

- [“Creating an Index” on page 191](#)
- [“Refining and Checking an Index” on page 209](#)

Creating an Index

Indexing is an iterative process. Your first pass at an index is merely the foundation on which to build your final index. The first pass will be full of similar primary entries that you need to break into secondary entries. When you first develop your index, you might introduce spelling errors and have incomplete page ranges in individual entries. Such errors can be corrected during the editing phase. See [“Refining and Checking an Index” on page 209](#) for possible solutions.

When an Index Is Needed

A document needs an index if it has 20 or more pages. This rule applies to any type of document, from a user's guide to a technical reference manual.

Time Required to Create an Index

Generally allow one full day for indexing for every 25 pages of text. A 100-page document might take four full days to index. An experienced indexer might require less time; a first-time indexer might require more time. Certain types of documents are much more difficult to index than others. Those documents require even more time than given in this guideline.

Deciding Which Parts of a Document to Index

The first decision you need to make when starting to create an index is to determine which of the following parts of a document to index:

- **Front matter.** Do not index the title page, copyright page, table of contents, and lists of figures, tables, and examples.
- **Preface.** Index the preface if it contains information about the subjects within the document and not just why the document was written. Topics you might index in a preface include prerequisite knowledge, other applicable documents, or document conventions.
- **Chapters.** Use the main body of the document as the source for most of the index entries.
- **Tables and figures.** Index topics within tables and figures if they are of particular importance to the discussion. Do not index items within tables that merely reproduce information already contained in the text. Including index references to the subjects of the tables and figures themselves is often helpful to a reader.
- **Footnotes.** Index footnotes if they contain information that expands on the information in the text. Do not index footnotes that merely document statements in the text.
- **Appendixes.** Index appendixes if they contain pertinent material omitted from the main body of the document. Do not index appendixes if they merely reproduce information already contained in the main body. A quick reference in an appendix, for example, is usually not indexed. Nor is a questionnaire. Worksheets in an appendix are indexed unless they merely repeat the main text.
- **Back matter.** Do not index terms in a glossary as long as they are explained elsewhere in the document. Do not index a bibliography or a reader comment form.

Selecting Topics to Index

When you take on the task of creating an index, you must first decide what the pertinent statements or topics are. A topic can be a single word, a phrase, or even a concept. A topic has no minimum or maximum size.

As you analyze a topic for inclusion in your index, decide whether the topic contains information a reader might expect to find in the index. If it does, create one or more index entries.

To determine whether a topic requires an index entry, analyze the topic for the following attributes:

- **Describes how to perform a task.** Tasks are the key subjects in certain types of documents, such as installation manuals.
- **Contains a definition of a term, acronym, or abbreviation.** Definitions are frequently the key to a reader's understanding of the document. An effective index makes it easy for a reader to find the definition or, similarly, an acronym or abbreviation. However, do not identify in an index definitions, acronyms, and abbreviations by glossary page numbers, but rather by text page numbers. See ["Create Index Entries for Acronyms and Abbreviations"](#) on page 198.
- **States a restriction, such as a Caution.** Awareness of the restriction might help a reader avoid costly mistakes.
- **Explains a concept or an idea.** This type of topic is most helpful to a reader. However, creating index entries that describe a concept or an idea is fairly difficult. The difficulty is in describing the whole concept in a few words.

Do Not Index Superfluous Entries

Frequently, superfluous entries are in an index because the person creating the index refers to every occurrence of selected words or phrases in the document. The index is not a concordance, but rather an information retrieval device.

For example, assume that the following sentence appeared in the text being indexed:

Separate chapters of this manual are devoted to the use of disk and tape storage devices.

In this example, the sentence provides no information about disk or tape storage. Therefore, a reader would gain nothing from these index entries:

disk storage, 37
:
tape storage, 37

Include entries in an index only if they refer a reader directly to useful information.

Avoid Entries That Are Too General

Do not use entries so general that they apply to a global level of information. Such an entry is too broad to inform a reader of the entry's corresponding content in the text.

For example, do not include entries such as “File Manager, creating files in” in a book about File Manager; or “features, of AdminTool” in a book about this Solstice application. The only entries under the name of the application you are documenting address its use, for example, entries such as “installing” or “quitting” the application.

Include Common Industry Terminology

Terms for common procedures and commands might differ, depending on the technology or company. If you know of a common synonym for a process or command, include an entry to direct a reader to the term used in your book, as shown in these examples:

abort, *See* cancel
 delete, *See* cut
 search, *See* find

Avoid Using Headings as Index Entries

Using headings as the basis for index entries results in an index that is hard for the reader to scan.

Incorrect	Correct
running the QuickView utility, 42	direct virtual memory access (DVMA), using, 87
using direct virtual memory access (DVMA), 87	hidden file, definition, 28
What is a hidden file?, 28	QuickView utility, running, 42

Consider Including “Commands” as a Primary Entry

If you decide to include “commands” as a primary entry, follow it with subentries for each command appearing in the book.

commands
 aset
 chmod

Describing a Topic

Once you have determined that a topic merits an index entry, find one or more ways to describe it to a reader. The descriptions that you create become the subjects of the index entries.

To describe a topic, follow these guidelines:

- Anticipate a reader's needs.
- Select the proper words for the subjects.
- Arrange the words for emphasis.
- Create multiple entries (double-post).
- Group the entries.

Anticipate a Reader's Needs

Readers usually use an index to answer one of the following questions:

- Where can I find information about a certain task, term, or topic?
- Does the information described by an index entry tell me what something is, how it works, or how to use it?
- Which pages can I ignore because they contain information I already know?

By anticipating a reader's needs as you describe topics for your index, you can create an index that helps a reader find information quickly and easily.

Include Only Terms a Reader Is Likely to Look Up

When creating an entry, ask yourself whether you would be likely as a reader to look in the index for that entry.

Questionable entries include the following:

- Entries starting with terms such as "how" or "why"
- Entries starting with irrelevant terms
- Commands or widgets used only in sample programs or examples
For example, in a book in which an exercise involves creating the buttons "Hello!" and "Adios!", do not include "Hello!" and "Adios!" as index entries.
- Titles of books in a "Recommended Reading" section
- Entries that use the same phrasing as section headings

Select Appropriate Words for Subjects

The words that you select are an abstract of the topic. Choose words that are as descriptive as possible. Using words from the text as subjects of index entries might satisfy readers who know the terminology used in the document. For other readers, provide subjects or cross-references worded so that they can find the desired information without specific prior knowledge.

Use Gerunds

Use a gerund, not an infinitive or a plain verb, as the main subject of an index entry when appropriate. For example, use “initializing” rather than “to initialize” or “initialize.”

Identify the Entry Type

Identify each entry for a computing term by including the type of entry after its name. For example, this type might be a command, file, function, or attribute:

```
apropos command
width attribute
```

Arrange Words for Emphasis

Typically, make the most important word the first word of the subject. The choice of most important word depends on what you want to stress or what is most important to a reader. For example, if the words you choose to describe a topic are “pixwin background color,” the primary entries might be as follows:

```
background color, pixwin
color, pixwin background
pixwin background color
```

Use Plural for Main Entries

In general, index the plural forms of nouns.

```
clients
:
servers
```

The exceptions to this rule are nouns that are only singular or nouns that are only used in the singular in the context being documented. Another exception is proper nouns such as the names of applications.

```
get command
:
Tmark database
```

Assign the Proper Font to the Entry

Keep in mind that certain terms require different fonts if you refer to the terms in different contexts. You also need to include a word such as “command,” “file,” or “directory” after such terms to further clarify the entry.

quit command
quit, in contrast to exit

Group Entries

Grouping entries means combining entries that have common first words into primary entries and secondary entries.

Ungrouped Entries	Grouped Entries
SBus, introduction	SBus <i>Primary entry</i>
SBus block diagram	block diagram <i>Secondary entries</i>
SBus specifications	introduction
	specifications

When selecting a subject to be followed by secondary entries, group subjects properly. Do not merely select a word or phrase for a subject because it is common to several entries. For example, assume that the following subjects appeared in your document:

igneous rock
metamorphic rock
rock music

To isolate “rock” and create three secondary entries is incorrect. If you analyze the use of “rock” in each entry, you can see that it is used in two different ways.

Incorrect	Correct
rock	rocks
igneous	igneous
metamorphic	metamorphic
music	rock music

Create Index Entries for Cautions, Notes, and Tips

You want readers to be able to locate the various restrictions or ease-of-use features in your document, including the following:

- Sets of rules
- Value limits (maximums and minimums)
- Incompatibilities between features and options
- Caution notices
- Ease-of-use Notes or Tips

Most of the topics that qualify as restrictions are not stated as such in the text. You must analyze the text to find the restrictions to index. Write index entries so that the subject describes the nature of the restriction.

You can also index those Notes or Tips that provide ease-of-use information or features.

Make sure to enable readers who are familiar with the document organization to ignore the entry if they already know the restriction or feature.

Incorrect	Correct
symbolic names, restriction	symbolic names, maximum length of
Window menu shortcut	Window menu shortcut, F9 key

In many documents, certain restrictions are identified specifically because of their importance. For example, assume that the following Caution notice appears in your document:



Caution – Never turn the system unit on or off while a diskette is in the disk drive. You might damage the diskette.

Index this restriction flagged with the word “Caution.” The entry might be as follows:

turning system on or off, Caution notice

Create Index Entries for Acronyms and Abbreviations

Include an acronym or abbreviation in your index if it is unique to your document or documentation set and if it is not likely to be found in common usage. Many acronyms and abbreviations need not be included in an index. For example, the abbreviations for most units of measure, such as Btu, in., or lb, are not good candidates for indexing.

Alphabetize acronyms and abbreviations as words, rather than as the spelled-out version of the acronym or abbreviation. When you include an acronym or abbreviation in an index, follow it with the word or words from which it was formed. Place those words within parentheses.

CCP (console command processor), 1-5

Double-post the entry by adding an entry for the words that form the acronym or abbreviation, followed by the acronym or abbreviation in parentheses.

console command processor (CCP), 1-5

Double-Posting Entries

Double-posting means identifying a topic in two different places in an index. For example, a topic that appears as “address switch” and “switch, address” is double-posted in the index. A topic that appears in three places is triple-posted, and so on.

Entry	Double-Posted or Triple-Posted Entries
power indicator	power indicator indicator, power
C shell command interpreter	C shell command interpreter command interpreter, C shell interpreter, C shell command

Be careful of over-indexing with double-posting. Certain entries do not deserve double-posting. For instance, the following example might be acceptable in a document that refers to only a few commands.

Entry	Double-Posted Entries
grep command	grep command command, grep

However, for a manual with many commands, the entries under “command” might grow too numerous. In this case, rather than creating a primary entry of “command” with many secondary entries, index the commands under the command name and do not double-post the entries. Instead, include a cross-reference.

Entries	Double-Posted Entries
cat command grep command history command ⋮	commands, <i>See</i> specific command names

Double-posting increases the number of index entries available to a reader, which broadens the scope of the index. The knowledgeable reader is not forced to scan the index for a general entry when seeking a specific topic.

Double-posting has a dramatic effect on usability. It is an essential technique for creating a high-quality index. Try to double-post entries for all key concepts and important terminology.

Keep in mind, however, that double-posting an index can affect your schedule. Because an extensively double-posted index provides a denser, more comprehensive view of a document's topics, be sure to include enough time in your schedule for double-posting your index.

Creating "See" and "See Also" References

You cross-reference index entries by creating "See" and "See also" references.

When to Use "See" and "See Also" References

- Use a "See" reference when you have so many secondary entries that repeating them is unreasonable.

configuration, *See* measurement configuration

⋮

measurement configuration

applying storage thresholds
calculating line speeds
defining data fields
defining entities

- Use a "See" reference to send readers from a broad category to a more specific category.

The next example is valid only if there are several secondary entries under "display thresholds," "exception thresholds," and "storage thresholds." Otherwise, you would double-post.

thresholds, *See* display thresholds; exception thresholds; storage thresholds

- Use a "See" reference to direct a reader from a term not used in the document to a term that is used as an index entry.

cars, *See* automobiles

- Consider using a "See also" reference to direct a reader to related information at another index entry.

Depending on how your index is structured, you might also use a "See also" cross-reference from a specific category to a general one.

dBASE, 37

See also database applications

- Use a “See also” reference to avoid fourth-level entries.

performance database

See also update, performance database
backing up data in
deleting
updating
⋮

update, performance database

automatic
displaying status
manual
starting
stopping

- Clarify index entries for some noun modifiers, such as “data” and “file,” that are ubiquitous.

If you have several long and complicated entries that start with the same word, readers might not look far enough to find a given topic. In this case, use a “See also” reference to help a reader.

data

See also data files; data records
collecting
deleting

- Never use a “See” reference with an entry that includes a page number.

Never include a page number in a “See also” reference.

Incorrect	Correct
structured files, 7-3 <i>See</i> files, structured	structured files, <i>See</i> files, structured
structured files, 7-3 <i>See also</i> chaotic files, 8-4	structured files, 7-3 <i>See also</i> chaotic files

- Make sure that a “See” or “See also” reference repeats the exact wording of the entry to which it refers.

Incorrect	Correct
database, <i>See</i> PDB	database, <i>See</i> performance database (PDB)
⋮	⋮
performance database (PDB)	performance database (PDB)

- Do not use unnecessary “See” references.
If you can reasonably double-post an entry, do so. Readers have every right to be annoyed if you send them searching through an index just for one or two page numbers.

Incorrect	Correct
command objects, <i>See</i> objects	command objects, 5-2, 5-8
⋮	⋮
objects, 5-2, 5-8	objects, 5-2, 5-8

In particular, do not send readers from a specific entry to a general entry, under which they must then search for the specific entry. However, be careful that you include general information under the specific entry as well. In the following example, “changing report attributes” must be under the entries for specific reports because a reader might not look at the general entry.

Incorrect	Correct
forecast reports, <i>See</i> reporting	forecast reports, 3-67
⋮	changing report attributes, 3-122
reporting	⋮
automatic, 2-33, 3-174	reporting
changing report attributes, 3-122	automatic, 2-33, 3-174
forecast reports, 3-67	changing report attributes, 3-122
predefined reports, 3-71	forecast reports, 3-67
	predefined reports, 3-71

- Do not use a “See also” reference to send a reader to a duplicate (double-posted) entry in an index.

Incorrect:

entry-sequenced files, 7-3

See also files, entry-sequenced

⋮

files, entry-sequenced, 7-3

How to Use “See” and “See Also” References

Here are basic formatting and punctuation rules for “See” and “See also” references:

- Italicize the words “See” and “See also.”
 - base window, 45
 - See also* pane
- Never include page numbers with “See” and “See also” references.
Use those references to direct a reader to another index entry.
 - floppy, *See* diskette
- Place the “See” reference on the same line as the index entry, separated with a comma.
 - search, *See* find
- Place the “See also” reference at the beginning of the entry.
Place the “See also” reference on a line by itself, and indent the reference from the line above.
 - aggregation scheme, 16
 - See also* summarization, data
- Use a semicolon to separate multiple “See” and “See also” references.
 - local area network, 24
 - See also* Ethernet; standards, networking; wide area network
- For secondary entries, use “See” and “See also” references as follows.

Incorrect	Correct
files comparing, 30 deleting, 24 initialization, 121 renaming, 141 files, editing, <i>See vi editor</i> files, printing, 35 <i>See also PostScript documents</i>	files comparing, 30 deleting, 24 editing, <i>See vi editor</i> initialization, 121 printing, 35 <i>See also PostScript documents</i> renaming, 141

Avoiding Indexing Problems

This section explains some established rules for indexing. If you disregard them, you might confuse or annoy readers. You might also appear incompetent to any reader who is knowledgeable about indexing.

Use a Single-Level Entry for a Single Topic

If you can use the primary entry alone, do so. A primary term with only one secondary term must be on a single text line. If you feel that the primary entry alone is misleading, rewrite it.

Incorrect	Correct
optimization routines use of, 38	optimization routines, 38 or optimization routines, use of, 38

Use an Adjective With a Noun as a Primary Entry

Use adjectives with related nouns to provide enough information for a reader.

Incorrect	Correct
implicit logoff command, 6-4 open command, 6-1 wait command, 6-6	implicit commands logoff, 6-4 open, 6-1 wait, 6-6

This rule applies to noun modifiers, that is, nouns that are being used as adjectives. This rule eliminates awkward, confusing constructions in which the primary entry is a noun relative to some secondary entries and an adjective relative to others.

Incorrect	Correct
data collecting, 81 files, 90 purging, 62 records, 47 : wait command, 29 parameter, 33	data collecting, 81 purging, 62 data files, 90 data records, 47 : wait command, 29 wait parameter, 33

Avoid a Primary Entry That Is Too General

Generally, if a primary entry is followed by half a page or so of secondary entries, either the primary entry is too broad or you are over-indexing. For example, in a printer manual, the primary entry “printer” is too broad to be indexed as a term.

If you feel that it is necessary or helpful, use “commands” plus a “See” reference to send a reader to alternate methods of locating a given command.

Incorrect	Correct
commands alias, 14 at, 19 batch, 23 : ypmatch, 132 ypwhich, 134 zcat, 135	(no entry at all, if most of the document describes commands) or commands, <i>See</i> individual commands by name or commands, summary of, 18

Do Not Over-Index

For manuals that have a repetitive structure, do not provide so many entries that they get in a reader's way. For example, in a reference manual containing many commands or utilities, you might be tempted to index the subheadings under each command. This often results in over-indexing, as shown in the following tables.

Incorrect	Correct
ast command attributes, 42 syntax, 33 examples, 36 ast_process command attributes, 49 syntax, 53 examples, 56 ast_subvolume command attributes, 50 syntax, 54 examples, 57	ast command, 33, 42, 36 ast_process command, 49, 53, 56 ast_subvolume command, 50, 54, 57

Over-indexing also occurs if you create several secondary entries under a primary entry when all entries are on the same page.

Incorrect	Correct
input devices buttons, 167 dials, 167 digitizer, 167 scanner, 167	input devices, 167

Do not provide two adjacent entries that are very similar. However, always double-post acronyms and abbreviations even if it is possible that the entries might be adjacent in the index. The test: If you omit an entry, can a reader still find the right place in the document?

Incorrect	Correct
delete_file command, 41 deleting a file, 41	delete_file command, 41

Do Not Under-Index

Some kinds of under-indexing are very obvious because they do not provide enough specific information to be useful.

Incorrect	Correct
reports, 31–39, 77	reports exporting, 77 generating, 34 preformatting, 33 specifying format, 36–39 types of, 31–33

Other types of under-indexing are not obvious, except to a reader. It is especially important to index *concepts*, not just the terms that appear in the document.

Incorrect	Correct
archive command, 77	archive command, 77 : backing up data to tape, 77 : tape backups, 77

Alphabetize by Keyword in Subentries

Alphabetize subentries by keyword, not by beginning articles, conjunctions, or prepositions. Reword subentries so that the keyword or key term, rather than an irrelevant introductory word, appears at the beginning of the subentry. If the subentry requires an article, conjunction, or preposition to flow correctly, try to include these additional words at the end of the subentry rather than at the beginning.

Incorrect	Correct
accounting software for, 11 summary of commands, 38 table of terms, 14–17 addressing issues for virtual networks, 34 naming conventions, 52 backing store and accumulation buffer, 10 and double buffering, 12 and Z buffer, 40 architecture, 5 device pipeline support, 22 overview, 1	accounting command summary, 38 software for, 11 terms, table of, 14–17 addressing naming conventions, 52 virtual network issues, 34 backing store accumulation buffer and, 10 architecture, 5 device pipeline support, 22 and double buffering, 12 overview, 1 and Z buffer, 40

Alphabetize by First Letter After a Symbol

For path, file, or variable entries that begin with a symbol, alphabetize these entries by the first letter of the first word following the symbol.

Incorrect	Correct
Symbols	C
<code>_config</code>	cancel command
<code>/etc/uucp/Limits</code>	<code>_config</code>
<code>.info</code>	Create menu
<code>\$PATH</code>	E
E	error reporting
error reporting	<code>/etc/uucp/Limits</code>
external files	external files
	I
	ID numbers
	<code>.info</code>
	P
	<code>\$PATH</code>
	primary numbers

Refining and Checking an Index

While creating the first draft of an index, you probably concentrated on the individual entries and their secondary entries. While editing the index, you are concerned with the index as a whole.

Editing an index might require that you create or delete entries, combine or split entries, and regroup or reword entries. In a sense, editing an index is not very different from editing the document. Namely, you verify that all necessary material is included, that it is in the intended order, and that it is error free.

Remember that you are reading an index in an abnormal way, that is, you are reading it from start to finish. Normally, readers search directly for the word or phrase they hope to find. Because you are reading an index this way, you might think that many entries are not necessary or are redundant. For some entries, this might be true, but to delete many entries on that basis alone is risky. Unless your analysis of the topic was incorrect when you created the entry, you probably had a specific reason for adding the entry.

Spelling

Many publishing systems do not check the spelling in the embedded index entries when the spelling checker is run on the body of the document. For this reason, always carefully proofread and run the spelling checker on index entries to catch spelling and typographical errors.

Differences in Wording

Determine whether slight variations in wording are intentional or whether you should use only one wording. If there are valid subjects that differ only slightly in wording, examine them to be sure that readers can recognize the difference. You might have to reword the subjects to make the differences apparent.

After creating the index, you might discover that you have used inconsistent terminology in the document. A consistency check and any necessary corrections are well worth the time it takes to standardize terminology.

For example, “AdminTool” might also appear as “Administration Tool”; “Admin Tool”; and “setting up, configuring.” You also must standardize usage for terms such as “home directory” and “root directory,” and “superuser” and “root user.”

Misused Singular Forms and Plural Forms

Check the entries for the misuse of singular forms and plural forms. Usually, only one form of a subject is justified. If you find more than one, combine secondary entries under one subject. Using both forms of a subject, such as “data set” and “data sets,” can cause errors. Several other entries and their subsequent secondary entries might intervene between the singular and plural forms of a subject. Spare readers the trouble of checking the index for both forms.

Incorrect	Correct
data set input output data set address data set area data sets format of table of	data sets address area format of input output table of

Effective Double-Posting

Check that all meaningful variations of a subject's wording appear in an index. See ["Double-Posting Entries" on page 199](#).

Number of Page References for Entries

Include no more than two to four page references per index entry. If an entry has more than two to four page references, see whether you can create secondary and tertiary entries to reduce the number of page references. See [Broken Link \(Target ID: SGINDEXING-35\)](#) for more information about providing separate entries for the benefit of online indexes.

Incorrect	Correct
block diagram, 21, 28, 33, 37, 45	block diagram attribute generator, 33 frame buffer, 37 front-end processor, 28 SBus adapter, 21 system unit, 45

Secondary Entries

When refining your index, examine secondary entries carefully in the following problem areas.

Levels of Secondary Entries

Check the levels of secondary entries so that proper indentation shows the relationship of one entry to the preceding one. See [Broken Link \(Target ID: SGINDEXING-37075\)](#).

Redundant Secondary Entries

Main entries that are followed by secondary entries should not have the same page reference.

In many cases, you can eliminate the secondary entries because a reader can find all the information on one page. Redundant secondary entries often occur when items in a table are indexed. See [“Do Not Over-Index” on page 206](#).

Incorrect	Correct
data sets format of, 2-7 table of, 2-7	data sets, 2-7

Possible Primary Entries in Secondary Entries

Check whether a secondary entry can also appear as a primary entry. If it can, verify that it exists as such or create the primary entry and insert it in the proper place.

Possible Rearrangement

Check whether secondary entries can be rearranged to stress a certain point. In this example, all three secondary entries can be in the same form. The form depends on what you want to stress.

Incorrect	Correct
window system colors, changing, 8-11 icon, moving, 4-22 saving properties, 8-15	window system colors, changing, 8-11 icon, moving, 4-22 properties, saving, 8-15

Appropriately Combined Secondary Entries

Review an index to make sure that you have combined relevant entries.

Incorrect	Correct
DeskSet selection protocol, 2-4 DeskSet atoms, 4-8 DeskSet drag-and-drop atoms, 4-4 DeskSet drag and drop handshaking, 4-2 DeskSet integration why do it, 1-2	DeskSet atoms, 4-8 drag and drop atoms, 4-4 handshaking, 4-2 integration, 1-2 selection protocol, 2-4

Secondary Entries Under More Than One Topic

Check for secondary entries that can be arranged under one topic rather than several. Such division of secondary entries is usually the result of misused “See also” references.

Incorrect	Correct
find function <i>See also</i> search function examples, 8-22 use of, 8-15 variables, 8-18 ⋮ search function dialog box, 8-9 and replace function, 8-21	find function dialog box, 8-9 examples, 8-22 and replace function, 8-21 use of, 8-15 variables, 8-18 ⋮ search function, <i>See</i> find function

Secondary Entries for Combined Terms

If similar terms appear in separate combined terms, move secondary entries under the appropriate combined term.

In the next example, the secondary entries starting with “database” under the “classing engine” main entry belong under the “classing engine database” main entry.

Incorrect	Correct
classing engine adding a new file type, 6-6 attributes, 6-4 database, accessing, 6-7 database, converting, 6-8 database, reading, 6-8 interactive modification, 6-5 mapping function, 6-3 classing engine database location of, 6-7 network, 6-9	classing engine adding a new file type, 6-6 attributes, 6-4 interactive modification, 6-5 mapping function, 6-3 classing engine database accessing, 6-7 converting, 6-8 location of, 6-7 network, 6-9 reading, 6-8

Secondary Entries Under Various Forms of One Topic

The number of secondary entries under various forms of the same topic should all be the same. In the example, “attention key” appears after the “terminal, communications” entry so that readers are aware of the information regardless of how they look it up.

Incorrect	Correct
communications terminal attention key, 4-16 polling character, 4-11 READY indicator, 4-10 : terminal, communications polling character, 4-11 READY indicator, 4-10	communications terminal attention key, 4-16 polling character, 4-11 READY indicator, 4-10 : terminal, communications attention key, 4-16 polling character, 4-11 READY indicator, 4-10

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General Word Usage

This appendix lists and briefly explains how to correctly use terms that writers and editors frequently look up when working on Sun documentation. Use the terms as stated in this table, and capitalize and punctuate them as shown.

Certain terms might appear differently in products, applications, or other material you are documenting. For example, use “log in,” not “log on.” However, if the audience you are writing for is accustomed to “log on,” use that terminology. Another example is that of “root” and “superuser.” Follow the style of the material you are documenting.

If you have a question about how to spell, capitalize, punctuate, or use a term commonly used that is not included in this table, especially how to spell out common acronyms, refer to the *OpenSolaris Glossary* at <http://opensolaris.org/os/community/documentation/glossary>. See *Merriam-Webster's Collegiate Dictionary*, available online at <http://www.m-w.com>, for standard usage of more common terms.

See also these sections in this guide for related guidelines and examples:

TABLE A-1 Correct Term Usage and Style

Term	Usage
Numbers/Symbols	
%	Use the % symbol in tables. Use “percent” in text. Also indicates a user prompt.
#	This character is called a “comment mark” or the “superuser” prompt depending on the context. Do not use this character as an abbreviation for “number.” Use “no.” instead.
1RU	Use “one rack unit (1 RU).”
2-D (modifier)	two-dimensional
3-D (modifier)	three-dimensional
10BASE2, 10BASE5	Note capitalization and lack of hyphenation.
10BASE-T, 10BASE-TX	Note capitalization and hyphenation.
100BASE-TX, 100BASE-FX, 100BASE-T4	Note capitalization and hyphenation.
A	
above	Do not use to refer to the location of another piece of information. Instead, use “previous” or “preceding,” or refer to the specific section heading or figure number, for example.
adapter	Note spelling.
add-on	noun, modifier
affect	Verb meaning “to change or influence something.” For example, “The style setting affects the appearance of the paragraph.” See also “effect.”
after	Do not use to refer to the location of another piece of information. Instead, use “next” or “following,” or refer to the specific section heading or figure number, for example.
airflow	noun
align to	Use “align with.”
allows	Use only when discussing permission. For example, “Write access allows the user to modify the file.” When discussing capabilities, use “enables” or rewrite the sentence. For example, “The Edit menu options enable you to modify the document” or “Use the Edit menu options to modify the document.” Also applies to “lets” and “permits.”

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
alphanumeric	modifier
a.m.	ante meridiem (morning)
and/or	Do not use. If you mean “or,” write “or.” If you mean “and,” write “and.” If you mean that any or all of the things that are named might be affected, say so. For example, “Using the Edit menu, you can cut, paste, or cut and paste text or graphics.”
antialias (noun); antialiasing (verb)	Note lack of hyphenation.
antiglare	modifier
antistatic	modifier
appendices	Use “appendixes.”
ASCII	Note capitalization.
assembly language (noun); assembly-language (modifier)	Note hyphenation.
ATA-2, ATA-3...	Note hyphenation.
audio-in	noun, modifier
audio-out	noun, modifier
autoboot	verb, modifier
autoconfigure	verb
autodetect	verb, modifier
autoloader	noun
automount	verb
autotermination	noun, modifier
B	
b	bit
B	byte
back end (noun); back-end (modifier)	Note hyphenation.
back panel	noun, modifier
backplane	noun
backplate	noun, modifier
backquote	noun, modifier

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
backslash	noun, modifier
backspace	verb, modifier
Backspace key	Note capitalization.
backup (noun, modifier); back up (verb)	Note lack of hyphenation.
backward	Note lack of final "s."
bandwidth	noun, modifier
base plate	noun
baud rate	Often incorrectly assumed to indicate the number of bits per second (bps) transmitted, baud rate actually measures the number of events, or signal changes, that occur in one second. In most instances when "baud rate" is used, the correct term is "bps." For example, a so-called 9600-baud modem that encodes 4 bits per event actually operates at 2400 baud, but it transmits 9600 bits per second (2400x4 bits per event) and thus is correctly called a 9600-bps modem. Check your source material before using the term "baud rate."
before	Do not use to refer to the location of another piece of information. Instead, use "previous" or "preceding," or refer to the specific section heading or figure number, for example.
below	Do not use to refer to the location of another piece of information. Instead, use "next" or "following," or refer to the specific section heading or figure number, for example.
benchmark	noun, modifier
bidirectional	modifier
big-endian (noun, modifier)	Note lack of capitalization.
bisynchronous	modifier
bit block	noun, modifier
bit field (noun); bit-field (modifier)	Note hyphenation.
bitmap	noun, modifier
bitstring	noun, modifier
boot PROM	Note capitalization.
bootstrap	noun, modifier
boot up	Use "boot."

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
Bourne shell	Note capitalization.
bpi	bits per inch
Bpi	bytes per inch
bps	bits per second
Bps	bytes per second
breakpoint	noun, modifier
bring the system down	Do not use. Write “cause the system to fail,” “shut down the system,” or “power off the system,” depending on the meaning.
bring up	Do not use. Write “power up the system,” “start the system,” “turn on the machine,” or “turn on the power to the system,” or other text, depending on the meaning.
broadband	modifier
BUI (browser user interface)	Do not use. Use “web browser” instead.
built-in	modifier
bundled	Do not use in external documents. Describe bundled products (for example, the CDE interface) as part of the Solaris operating system. See also “co-packaged.”
buses	Note spelling.
bus nexus	modifier
byte stream (noun); btye-stream (modifier)	Note hyphenation.
C	
c	centi (prefix)
°C	degrees Celsius
callback	noun, modifier
can	Use to indicate the power or the ability to do something. For example, “See if you can log in to the system.” See also “may” and “might.”
canceling	Note no double “l.”
cannot	Note spelling.
card cage	noun
case-sensitive	modifier

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
CD	compact disc. Note spelling of "disc."
CD-digital audio format	Note hyphenation and capitalization.
CD-ROM	compact disc read-only memory (noun, modifier). Note spelling of "disc." Use to refer generically to CD-ROM media, for example, "The software is distributed on CD-ROM discs." If referring to a specific compact disc for installation or other purposes, "CD" is acceptable, for example, "Load the CD into the CD-ROM drive." If referring to CD-ROM media that contain wholly or mostly music, add the adjective "audio," as in "audio CD-ROM."
centerplane	noun
centigrade	Use "Celsius."
check box	Note that some interface standards might spell this none as one word.
check-in (noun, modifier); check in (verb)	Note hyphenation.
check-out (noun, modifier); check out (verb)	Note hyphenation.
chipset	noun
client	Use only when talking about the relationship with a server. Do not use to refer to a person.
client-server	Use when describing a relationship between a client and a server. For example, "This network is based on the client-server model."
coaxial	modifier
codec	coder/decoder compression/decompression
code name	noun
codeset	noun, modifier
color map	noun, modifier
.com; dot-com	Use .com when referring to the suffix itself. Also use .com in appropriate trademarked terms, or when your document requires no variations on the term ".com." Use dot-com when referring to companies ("dot-coms"), when using as a verb ("to dot-com," "dot-commed," "dot-comming"), or when the term is the first word in a sentence or heading.

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
COM1, COM2...	communications port. You can also use the terms “serial port A, serial port B” and so on.
command line (noun); command-line (modifier)	Note hyphenation.
Command Tool window	Note capitalization.
comprise	Avoid using “comprise.” Use “contain” or “include” instead. Do not use “comprised of” when you mean “composed of.”
configurable	Note spelling.
connect (verb)	Use “plug” only in the context of “plug and play.”
context-sensitive	modifier
controller	Note spelling.
coprocessor	noun, modifier
coroutine	noun, modifier
cross-assembler	noun, modifier
cross-compiler	noun, modifier
cross-reference	noun, verb, modifier
cross-section (noun); cross-sectional (modifier)	Note hyphenation.
currently	Use only in a document that you know will be updated regularly, for example, in release notes. You can also use a specific date, for example, “August 2002.”
C shell	Note capitalization.
D	
d	deci (prefix)
da	deka (prefix)
D/A	digital-to-analog (modifier)
daemon	Note spelling (pronounced like “demon”).
data	Although in the pure Latin form this noun is plural, the most common industry usage is in the singular. For example, “The data is available.”
database	noun, modifier
dataless	Define this word on first reference and include it in a glossary if your book has one.

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
datasheet	noun, modifier
data stream	noun, modifier
data type	noun
daughterboard	noun, modifier
dB	decibel
D-connector	noun
default	Define this word narrowly and use it consistently.
deinstall	Use “uninstall.”
depress	You do not “depress” a key. Use “press.”
depth cueing	noun
deselect	verb
design	Do not use. Do not write, for example, “XYZ is designed to search for files.” If XYZ is designed to search, assume that it does. Write “XYZ searches for files.”
desire	Use “want.”
DeskSet tools	Note capitalization.
desktop	Use only when you are referring to a specific piece of hardware. Otherwise, use “system” or “host.”
device	Define this word narrowly and use it consistently.
device driver (noun, modifier)	Note lack of hyphenation.
dial-up	modifier
die	Use “fail.”
Digital Data Storage	noun
directory name (noun); <i>directory-name</i> (variable)	Note hyphenation.
disappear	Do not use. A window does not “disappear.” Use “dismiss” instead.
disc	Note spelling for an optical disc or video disc.
disk	Use to refer to a hard disk.
disk drive	Use to refer to a hard disk drive.
diskfull	Define this word on first reference and include it in a glossary if your book has one.

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
diskless	Define this word on first reference and include it in a glossary if your book has one.
dot-com, .com	Use dot-com when referring to companies (“dot-coms”), when using as a verb (“to dot-com,” “dot-commed,” “dot-comming”), or when the term is the first word in a sentence or heading. Use .com when referring to the suffix itself. Also use .com in appropriate trademarked terms, or when your document requires no variations on the term “.com.”
double click (noun); double-click (verb, modifier)	Note hyphenation.
double-density	modifier
double-sided	modifier
doubleword (noun); double-word (modifier)	Note hyphenation.
download	verb, modifier
downtime	noun
drag and drop (verb); drag-and-drop (modifier)	Note hyphenation.
drive 0, drive 1...	Use a numeral to refer to a drive number.
drive A:, drive B:	Use a capital letter followed by a colon to refer to a drive letter.
dual-access	modifier
dual-density	modifier
dump file	noun
E	
EBus	Note capitalization.
Ecache	Note capitalization.
edge-triggered interrupt	noun
effect	Noun meaning a result or consequence. For example, “The style setting has an effect on the appearance of the paragraph.” See also “affect.”
e.g.	Use “for example.”
ejector lever	Use “ejection lever.”

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
electrical shock	Use "electric shock."
email	noun, modifier (<i>not</i> a verb)
enables	See "allows."
-enabled	Avoid. Use text such as "works with" or "is compatible with" instead.
endianness	noun
endpoint	noun, modifier
end user (noun); end-user (modifier)	Use only if you need to distinguish between a developer (your user) and the person (the end user) who will be using the product the developer designs.
ensure that	Be sure to include the word "that" when introducing a restrictive clause.
enter the following command	To avoid confusion with the Enter key, do not use. Write "type the following command" instead.
environment	When using this word outside a product name context, define this word narrowly and use it consistently.
EOL	Limit this abbreviation for "end of life" to internal documents.
etc.	Use more explicit text, which also solves problems with sentence-ending punctuation. For example, do not write "Mail Tool enables you to compose email messages, respond to email messages, etc." Instead, write "Mail Tool enables you to compose email messages, respond to email messages, and perform other mail administration tasks."
Ethernet	Note capitalization.
expansion bus	noun
expansion memory bus interface	noun
F	
F	farad
°F	degrees Fahrenheit
faceplate	noun
failover (noun); fail over (verb)	Note lack of hyphenation.
fast-on	modifier
Fast Ethernet	Note capitalization.

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
Fast SCSI	Note capitalization.
Fast Wide SCSI	Note capitalization.
FCode	Note capitalization.
fdisk partition	On an x86 based system, a special type of partition that can contain a maximum of four different operating systems. See also "partition."
feedback	noun, modifier
fiber optics (noun); fiber-optic (modifier)	Note hyphenation. Note lack of final "s" for modifier.
Fibre Channel	Note spelling.
file name (noun, modifier); <i>filename</i> (variable)	Note lack of hyphenation.
file server (noun, modifier)	Note lack of hyphenation.
file sharing (noun); file-sharing (modifier)	Note hyphenation.
file system (noun, modifier); <i>filesystem</i> (variable)	Note lack of hyphenation.
filler plate	Use "filler panel."
firmware	noun
fixed disk	Use "disk drive."
fixed length (noun); fixed-length (modifier)	Note hyphenation.
fixed point (noun); fixed-point (modifier)	Note hyphenation.
flash PROM	Note capitalization.
flat-blade	modifier
floating point (noun); floating-point (modifier)	Note hyphenation.
floppy	Use "diskette."
floppy disk	Use "diskette."
floppy disk drive	Use "diskette drive."
floppy drive	Use "diskette drive."
flowchart	noun

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
following	Use to refer to the location of another piece of information. Consider using “next” or referring to the specific section heading or figure number.
follow-up (noun, modifier); follow up (verb)	Note hyphenation.
Fortran	Note the capitalization of this acronym for formula translation.
frame buffer	noun
framework	noun
front end (noun); front-end (modifier)	Note hyphenation.
front panel	noun
FRU	field-replaceable unit. Note spelling of “replaceable.” Pronounced “fru” so the preceding indefinite article should be “a,” not “an.”
ft	foot
ft lb	foot-pound
full-duplex	modifier
G	
g	gram
G	giga (prefix). In computer terminology, “G” represents 2 ³⁰ , or 1,073,741,824.
Gb	gigabit
Gbit/sec; Gbps in tables only	gigabits per second. In tables, footnote the first occurrence of “Gbps” and state that it stands for “gigabits per second.”
Gbyte; G, GB in tables only	gigabyte
Gbyte/sec; GBps in tables only	gigabytes per second. In tables, footnote the first occurrence of “GBps” and state that it stands for “gigabytes per second.”
Gcache (noun)	Note capitalization.
GENERIC configuration kernel	Note capitalization.
geo-	Use a hyphen with this prefix for “geo-specific” and “geo-neutral,” but <i>not</i> for “geocentric.”
geographical region	Use “geographic region.”
GHz	gigahertz

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
graphics card	Use "video display device."
grayed-out	modifier
gray scale (noun); gray-scale (modifier)	Note hyphenation.
GX frame buffer	Note capitalization.
H	
half-duplex	modifier
half-height	modifier
halftone	noun, modifier
halfword (noun); half-word (modifier)	Note hyphenation.
handheld	modifier
hands-on	modifier
hard-coded	modifier
hard copy (noun); hard-copy (modifier)	Note hyphenation.
hard disk	Use "disk."
hard disk drive	Use "disk drive."
hard drive	Use "disk drive."
hardwire (verb); hardwired (modifier)	Note change for modifier.
heat sink	noun
hex	hexadecimal (modifier)
high density (noun); high-density (modifier)	Note hyphenation.
high end (noun); high-end (modifier)	Note hyphenation.
high level (noun); high-level (modifier)	Note hyphenation.
high order (noun); high-order (modifier)	Note hyphenation.
high performance (noun); high-performance (modifier)	Note hyphenation.

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
high priority (noun); high-priority (modifier)	Note hyphenation.
high resolution (noun); high-resolution (modifier)	Note hyphenation.
high speed (noun); high-speed (modifier)	Note hyphenation.
hit	Do not instruct a person to “hit” anything, including computer keys. Use “press.”
hits (noun)	Use “hits” to refer to the number of times a particular piece of information appears when searching the web, for example. See also “search results.”
home page	noun
host (noun, verb)	When used as a noun, “host” means a computer connected to a network.
host name (noun); host-name (modifier); <i>hostname</i> variable	Note hyphenation.
hot key (noun, verb); hot-key (modifier)	Note hyphenation.
hotline	noun, modifier
hot-plug, hot-plugging (verb); hot-pluggable, hot-plugged (modifier)	Note hyphenation.
hot-spare	noun
hot-swap, hot-swapping (verb); hot-swappable, hot-swapped (modifier)	Note hyphenation.
hypertext, hypertext link	Use “link.”
Hz	hertz
I	
I ² C	inter-integrated circuit
i.e.	Use “that is.”
I18N	Limit this abbreviation for “internationalization” to internal documents.
if	Use to refer to a conditional event. See also “when.”
IF	interface (noun, modifier; <i>not</i> a verb)

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
in.	inch. The abbreviation ends with a period.
indices	Use "indexes."
information on	Use "information about."
inline	adverb, modifier
inode	Pronounced "eye-node."
in order to	Use "to."
input	noun, modifier (<i>not</i> a verb)
instructions about	Use "instructions on."
inter-integrated circuit (I ² C)	Note hyphenation.
Internet	Note capitalization.
interoperability	Define narrowly in a network or Internet context. Otherwise, use "works with" or "is compatible with."
intranet	Note the lack of capitalization for an internal TCP/IP network.
invoke	Use only if no other word accurately describes the action. Usually, you can substitute "run," "start," or "call."
ips	inches per second
IPS	instructions per second interrupts per second
its, it's	Without an apostrophe, "its" is the possessive form of the pronoun "it." For example, "The site describes the eMetrics program and its accompanying utilities." With an apostrophe, "it's" is an abbreviation for "it is." This construction should rarely be used as it is often incorrectly used without a clear reference for the pronoun. For example, "It's easy to install this product."
K	
k	kilo (prefix)
K	kelvin (unit of absolute temperature). In computer terminology, "K" represents 2 ¹⁰ , or 1024.
Kb	kilobit
Kbit/sec; Kbps in tables only	kilobits per second. In tables, insert a footnote at the first occurrence of "Kbps" and state that it stands for "kilobits per second."

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
Kbyte; K, KB in tables only	kilobyte
Kbyte/sec; KBps in tables only	kilobytes per second. In tables, insert a footnote at the first occurrence of "KBps" and state that it stands for "kilobytes per second."
keyboard	noun, modifier
keyboard/mouse port	noun (note slash)
keylock	noun
keymap	noun, modifier
keypad	noun, modifier
keystroke	noun, modifier
keyswitch	noun
keyword	noun, modifier
kg	kilogram
kHz	kilohertz
km	kilometer
Korn shell	Note capitalization.
kV	kilovolt
kW	kilowatt
kWh	kilowatt-hour
L	
L1-A	Note capitalization.
L10N	Limit this abbreviation for "localization" to internal documents.
labeled	Note no double "l."
label-side up	modifier
laser disc	Note spelling.
launch	Use "start."
lb	pound
least significant	noun, modifier
left-hand side	Use "left side."

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
left-justified	modifier
lets	See “allows.”
Level 2 cache	Note capitalization.
level-triggered interrupt	noun
line-in, line-out	Both noun and modifier
link	noun, verb
link-fail state	noun
link integrity test	noun
link-pass state	noun
link test disabled	modifier
link test enabled	modifier
link test function	noun
link test pulses	noun
list file	noun
little-endian (noun, modifier)	Note lack of capitalization.
lockup (noun, modifier); lock up (verb)	Note lack of hyphenation.
log file	noun
login	noun, modifier
log into	Use “log in to.”
logoff, log off	Do not use unless these terms appear in an application that you are documenting.
logon, log on	Do not use unless these terms appear in an application that you are documenting.
look and feel	noun
loopback	noun, modifier
look up (verb); look-up (modifier); lookup (noun)	Note hyphenation.
low	See related terms under “high” for correct usage.
lowercase	noun, verb, modifier
lower left	modifier

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
lower right	modifier
M	
μ	If your authoring environment does not support this symbol for micro, spell out the measurement.
μA	microampere
μF	microfarad
μg	microgram
μm	micrometer
μs	microsecond
μV	microvolt
μW	microwatt
m	meter milli (prefix)
M	mega (prefix). In computer terminology, “M” represents 2 ²⁰ , or 1,048,576.
mA	milliampere
machine-readable	modifier
mainframe	noun, modifier
main menu	Note lack of capitalization when used generically.
man page	The “man” part of this term when used generically is treated as a standard English word and is capitalized in headings and at the beginning of a sentence. For example, “Man pages are very helpful.” However, the man command appears in monospace font and is always lowercase.
mass storage (noun); mass-storage (modifier)	Note hyphenation.
master I/O controller	noun
may	Use only when granting permission. For example, “You may use either uppercase or lowercase letters.” Use “can” to indicate the power or ability to do something. Use “might” to indicate a possibility.
Mb	megabit
Mbit/sec; Mbps in tables only	megabits per second. In tables, footnote the first occurrence of “Mbps” and state that it stands for “megabits per second.”

TABLE A-1 Correct Term Usage and Style (Continued)

Term	Usage
MBus	Note capitalization.
Mbyte; MB in tables only	megabyte
Mbyte/sec; MBps in tables only	megabytes per second. In tables, footnote the first occurrence of "MBps" and state that it stands for "megabytes per second."
MDB	multiple device boot. Do not use initial capitalization for the spelled-out form unless the term appears that way on a label or screen.
menu-driven	modifier
metadata	noun, modifier
metadevice	noun, modifier
metadisk	noun, modifier
metafile	noun, modifier
Meta key	Note capitalization.
mF	millifarad
MHz	megahertz
mice	Do not use. Use "mouse devices" to refer to more than one mouse.
microcode	noun, modifier
micro-D	modifier
microprocessor	noun
midrange	noun, modifier
might	Use to indicate a possibility. For example, "You might need to use another mouse." See also "can" and "may."
might want to	Do not try to read minds. Write "If you want to exit from the application, click Exit."
modem	modulator/demodulator
monochrome	modifier
monospace	modifier
-most	Do not use with directional words such as "left" or "top." Use phrases such as "on the left" or "at the far left" instead.
most significant	noun, modifier
motherboard	noun

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
mount	Define this word narrowly and use it consistently.
mount point (noun); mount-point (modifier)	Note hyphenation.
multi-owner	Note hyphenation.
multiple address spaces	noun
multiplexer	Note spelling.
Multi-Tape Backup Tray	Note capitalization.
multitasking	Note lack of hyphenation.
MUX	multiplexer (<i>not</i> "multiplex"). Note spelling.
mV	millivolt
mW	milliwatt
MW	megawatt
N	
namespace	noun, modifier
NetBIOS	Note capitalization.
newline	noun, modifier
next	Use to refer to the location of another piece of information. Consider using "following" or referring to the specific section heading or figure number.
NIS+	This abbreviation for Network Information Service Plus is pronounced "en-eye-ess plus," so precede it with "an," not "a."
node name (noun); <i>nodename</i> (variable)	Note lack of hyphenation.
non-preinstalled	Use "not preinstalled."
non self-identifying (noun, modifier)	Note hyphenation.
now	Use only in a document that you know will be updated regularly, for example, in release notes. You can also use a specific date, for example, "August 2002."
O	
OBDiag	Use only to refer to the onscreen menu, and do not abbreviate the trademarked product name.

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
object-oriented	modifier
OBP	Use only to refer to onscreen text and not to abbreviate the trademarked product name.
off and on	If referring to a switch on a specific piece of equipment, use the capitalization that appears on the equipment (usually ON and OFF). If referring to a switch that is marked with symbols only, use initial capitalization and include the symbol in parentheses, for example, "On (1)" or "Off (o)." Otherwise, use lowercase letters, for example, if you are telling the user to turn the power on or off.
offline	adverb, modifier
off-load	verb
ohmmeter	noun
on-board	modifier
online	adverb, modifier
onscreen	modifier
optical disc	Note spelling.
output	noun (<i>not</i> a verb)
oz	ounce
P	
p	pico (prefix)
panhead screw	noun
partition	A synonym for "slice." See also "disk partition" and "slice."
path name (noun); path-name (modifier); <i>pathname</i> (variable)	Note hyphenation.
PC file viewer	Note capitalization.
PCI card	Note capitalization.
PC launcher	Note capitalization.
percent	Use "percent" in text. Use the % symbol in tables.
permits	See "allows."
Personality ASIC	Note capitalization.
Phillips-head screw or screwdriver	Do not use the "-head" suffix. Use Phillips screw, Phillips screwdriver, No. 2 Phillips screwdriver.

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
Photo CD format	noun
pinout	noun
pkgadd	Use "pkgadd utility" or "pkgadd script," not "pkgadd file."
please	Do not use. You are not making a request, you are telling the reader to do something.
plug (noun, verb)	For the verb form, use "connect" to avoid confusion except in the context of "plug and play."
plug and play	Use to indicate the general ability to connect pieces of hardware together so they "just work." For example, "The goal of the Solaris device configuration framework is for devices to plug and play, with no user configuration required."
Plug and Play (PnP is abbreviation)	Use to refer to devices that conform to published Plug and Play specifications. For example, "Non-Plug and Play devices are referred to as 'legacy devices.'"
plug-in (noun, modifier)	Note hyphenation.
p.m.	post meridiem (after noon)
pop-up	modifier
pops up	Do not use. Use "appears" or "is displayed."
port A	Note capitalization.
postinstall, preinstall	Write "install" unless you are describing a process that literally takes place before or directly after installation.
postpend	Means "attach to the end." Use "append" instead.
power down (verb); power-down (modifier)	Powering down is a procedure. If you are writing about flipping a switch, use "Turn the power off."
power off (verb); power-off (modifier)	Note hyphenation.
power on (verb); power-on (modifier)	Note hyphenation.
Power On/Off switch	Note capitalization.
power up (verb); power-up (noun, modifier)	Powering up is a procedure. If you are writing about flipping a switch, use "Turn the power on."
preceding	Use instead of "before" to refer to the location of an immediately prior piece of information.
preprocessor	noun

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
presently	Use only in a document that you know will be updated regularly, for example, in release notes. You can also use a specific date, for example, "August 2002."
preventative	Use "preventive."
previous	Use instead of "before" to refer to the location of another piece of information mentioned earlier.
print out (verb)	Use "print."
printout	noun
pseudo-device	noun, modifier
pull-down	modifier
pull-right	modifier
Q	
queuing	Note spelling.
R	
rackmount	noun, modifier, verb
rack unit	Use "one rack unit (1 RU)."
RAID 5, RAID Level 5 (noun); RAID-5 (modifier)	Note capitalization, and hyphenation of modifier.
raster file (noun); raster-file (modifier)	Note hyphenation.
Ready signal	Note capitalization.
real mode (noun); realmode (modifier)	Note lack of hyphenation.
real time (noun); real-time (modifier)	Note hyphenation.
rear panel	Use "back panel."
reattach	verb
recommend	Do not use. Just go ahead and recommend. For example, write "Back up all your files once each week," not, "It is recommended that you back up all your files once each week." In some less definitive instances, describe the circumstances in which backing up is recommended. For example, "Back up your xxx file whenever you modify it."

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
re-create	verb
reinsert	verb
reinstall	verb
reinstallation	noun
removable	Note spelling.
replaceable	Note spelling.
reprobe	verb
retry	verb
.rhost file	Pronounced "dot r-host file." The preceding indefinite article should be "a," not "an."
right click	To be safe, use "click mouse button 3." Some people reverse the "handedness" of their mouse devices.
right-hand side	Use "right side."
right-justified	modifier
RJ-45	noun, modifier
root	Use to refer to the root (/) directory or root (/) file system. Use monospace font for the slash. Use the default font for "root" unless root stands for a specific user name. See also "superuser."
RS-232-C, RS-423...	noun, modifier
RU	Use "one rack unit (1 RU)."
run level	noun, modifier
run-on	modifier
runtime	noun, modifier
S	
s, sec	second
SBus	Note capitalization.
scalable	Note spelling.
screen shot	Use "screen capture."
scrollbar	noun
SCSI-2	modifier

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
SCSI address 0	Note capitalization.
SCSI bus	Note capitalization.
SCSI device identifier (SCSI ID)	Note capitalization.
search results	Use "search results" to refer to information obtained when searching the web, for example, unless doing so conflicts with a user interface convention. See also "hits."
self-test	noun, modifier
semiconductor	noun, modifier
serial port A, serial port B...	Note capitalization. You can also use the terms "COM1, COM2" and so on.
server	Because a network includes many types of servers, assign a limiting modifier and use it throughout, for example, "print server" or "session server." Use also when talking about the relationship with a client.
setup (noun, modifier); set up (verb)	Note lack of hyphenation.
Shell Tool window	Note capitalization.
shutdown (noun, modifier); shut down (verb)	Note lack of hyphenation.
shut off	Use "power off."
side rail	noun
simple	This term usually does not apply to technical information.
simply	This term usually does not apply to technical information.
single-density	modifier
single-sided	modifier
single-tasking	modifier
slave I/O controller	Note capitalization.
slice	A disk is composed of groups of cylinders. A slice is a distinct group of cylinders on a disk. Some Solaris commands use the term "slice," others use the term "partition." The terms are synonymous. Disks are divided into slices, not partitioned, divided into partitions, or sliced. See also "partition."
smart card (noun, modifier)	Lowercase when used generically.
spacebar	Note lack of capitalization.

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
spreadsheet	noun, modifier
springfingers	noun
sq	square
stand-alone (modifier)	Note hyphenation.
start up (verb)	Use "start."
startup	noun, modifier
stream, Stream, STREAMS	Use "stream" to refer to a data stream. Use "Stream" to refer to a communication Stream that is part of the larger STREAMS mechanism. Use "STREAMS" to refer to the mechanism that defines interface standards for character I/O within the kernel and between the kernel and user level.
Sun-4u	Note hyphenation.
SuperI/O	Note lack of hyphen or space.
supersede	Note spelling.
superuser	Because searching on "root" yields many irrelevant entries, use "superuser" (not "root") when documenting actions that require su (#) privileges. For example, write "Become superuser" or "Create a superuser password when prompted" or "Superuser privileges are limited." If the product, application, or other material that you are documenting follows another convention, use that other convention to avoid confusion. See also "root."
system	Use to refer to software or a combination of hardware and software. For example, "file system" or "system software." Also use to refer to a computer and its peripherals. A system does not have to be connected to a network. Other terms that can be used for "system" are "host," "machine," and "computer." "Host" is typically used in network-related documentation. Use "machine" or "computer" when "system" is already being used to describe the software or combination of hardware and software. When possible, use more descriptive terms than the generic term "system," such as "mail server" or "remote system."
system name (noun); <i>system-name</i> (variable)	Note hyphenation.
T	

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
Tbyte; TB in tables only	terabyte. This represents 2 ⁴⁰ , or roughly a thousand gigabytes.
Telnet window	Note capitalization.
text-only	modifier
that	This word is often misused in nonrestrictive clauses instead of "which." Use "that" for restrictive clauses. For example: "I like mysteries that are suspenseful." (I only like those mysteries that are suspenseful.) "I like mysteries, which are suspenseful." (I like all mysteries, and mysteries have the attribute of being suspenseful.)
there are	Because "there are" is ambiguous, avoid using this phrase at the beginning of a sentence or clause.
there is	Because "there is" is ambiguous, avoid using this phrase at the beginning of a sentence or clause.
thick Ethernet	Note capitalization.
Thicknet	Note capitalization.
Thinnet	Note capitalization.
third party (noun); third-party (modifier)	Note hyphenation.
time out (verb); timeout (noun, modifier)	Note lack of hyphenation.
timesharing	noun, modifier
timestamp (noun); time stamp (verb)	Note lack of hyphenation.
time zone	noun
Tip connection	Note capitalization.
TOD	time-of-day (modifier)
token reader	noun
Token Ring	Use initial capitalization only when referring specifically to the IBM Token Ring or the IBM Token-Ring Network.
toolkit	noun
toward	Note lack of final "s."
TPE Link Test	Note capitalization.
trackball	noun

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
trade-off (noun, modifier); tradeoff (verb)	Note hyphenation. Use verb form sparingly.
transition	noun (<i>not</i> a verb)
translation-lookaside	noun, modifier
triple-height	modifier
trivial	Do not use. A cliché, this word does not mean “easy.” It means “insignificant.”
troubleshooting (noun, modifier); troubleshoot (verb)	Note change for verb.
true-color	modifier
twisted pair (noun); twisted-pair (modifier)	Note hyphenation.
Twisted-Pair Ethernet Link Test	Note capitalization.
Type-5	modifier
U	
UltraSCSI (modifier)	Note spelling, capitalization, and lack of hyphenation.
Ultra Wide SCSI	Note capitalization.
uninstall	verb, modifier
uniprocessor	noun
Update CD	Use “Supplement CD.”
upgradable	Note spelling.
upload	verb, modifier
uppercase	noun, verb, modifier
upper left	modifier
upper right	modifier
uptime	noun
U.S.; U.S.A.	United States; United States of America These abbreviations include periods.
usable	Note spelling.
user-defined	modifier

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
user-friendly	modifier
userland (noun, modifier)	Means “not in the kernel.” Use sparingly.
user name; <i>username</i>	noun; variable
using	Be careful. “Configure the roles using a single rights profile” can be interpreted either as “Use a single rights profile to configure the roles” or “Configure the roles that are using a single rights profile.” If you mean to use the verb form, make sure that you supply the required preposition: “Configure the roles <i>by</i> using a single rights profile.”
V	
V	volt
variable-length	modifier
versus, vs.	Use “compared with.”
vertexes	Plural of vertex.
via	Do not use. Use the more common equivalents “through,” “by means of,” “using,” or “by way of.”
video disc	Note spelling.
vi editor	Note lack of capitalization and typographic convention.
VMEbus	Note capitalization.
volt-ohmmeter	noun
volume management	Use “volume management” when referring to the technology that manages removable media. For example, “The volume management daemon, <code>vold</code> , automatically mounts and unmounts removable media such as Zip or Jaz drives.”
W	
W	watt
W3C	World Wide Web Consortium. Use “W3C” sparingly.
wake-on-lan cable	Note capitalization.
web	Use lowercase except in the term “World Wide Web” or in specific product names.
Wh	watt-hour
when	Use to refer to an inevitable event. See also “if.”
whether or not	The words “or not” are usually unnecessary. This whole phrase can sometimes be replaced with “if.”

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
which	This word is often misused in restrictive clauses instead of “that.” Use “which” for nonrestrictive clauses. For example: “I like mysteries that are suspenseful.” (I only like those mysteries that are suspenseful.) “I like mysteries, which are suspenseful.” (I like all mysteries, and mysteries have the attribute of being suspenseful.)
white paper	noun
Wide SCSI	modifier
wildcard	noun, modifier
Windows	When generally speaking of Microsoft Windows, always preface with “Microsoft.” When mentioning the specific products, for example, “Windows NT” or “Windows 2000,” do not include “Microsoft.”
wish	Use “want.”
workaround (noun); work around (verb)	Note lack of hyphenation.
workgroup	noun, modifier
workload	noun
worksheet	noun
workspace	noun, modifier
Workspace menu	Note capitalization.
workstation	Use “system” or “host” instead. Do not use “workstation” unless you are referring to a specific piece of hardware.
wraparound (noun, modifier); wrap around (verb)	Note lack of hyphenation.
write-back	modifier
write-enable (verb); write-enabled (modifier)	Note hyphenation.
write-protect (verb); write-protected (modifier)	Note hyphenation.
X	
x86	Note lack of capitalization.
x-axis	Note hyphenation and lack of capitalization.
XBus	Note capitalization.

TABLE A-1 Correct Term Usage and Style *(Continued)*

Term	Usage
XDBus	Note capitalization.
XON/XOFF	Note capitalization.
Y	
y-axis	Note hyphenation and lack of capitalization.
Z	
z-axis	Note hyphenation and lack of capitalization.
z-buffer	Note hyphenation and lack of capitalization.
zeros	Note spelling.

alpha **Composed November 11, 2005**

Recommended Reading

This appendix lists resources targeting the needs of developers, technical writers, editors, production staff, and illustrators.

Note – This list is for your reference only. You must seek permission from the publisher owning the copyrighted source material before reprinting any text that you select, either in book or electronic form.

This appendix covers the following categories:

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- “Web and Internet Publishing” on page 261
- “Writing Standards” on page 263
- “Writing Standards for Technical Writing” on page 263

Desktop Publishing and Document Design

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Graham, Lisa. *Basics of Design: Layout and Typography for Beginners*. Clifton, N.Y.: Delmar Learning, 2001.

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Horn, Robert E. *Mapping Hypertext: The Analysis, Organization, and Display of Knowledge for the Next Generation of On-line Text and Graphics*. Lexington, Mass.: Lexington Institute, 1990.

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