

# FreeBSD 文件計畫入門書

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DocEng

## 摘要

感謝您參與 FreeBSD 文件計畫，您的點滴貢獻，都相當寶貴。

本入手書內容包括：如何開始著手貢獻 FreeBSD 文件計畫（簡稱：FDP）的各項細節，以及會用到的一些工具、軟體，以及文件計畫的宗旨。

本入門書仍在持續撰寫中。任何修正或新增內容的建議都非常歡迎。

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### 重要

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# 序

## 1. Shell 提示符號(Prompts)

下表顯示出一般使用者帳號與 root 的提示符號，在所有的文件例子中會用提示符號(prompt)，來提醒您該用哪種帳號才對。

帳號	提示符號
一般使用者	%
root	#

## 2. 書中所用的編排風格

下表為本書中所使用編排風格方式

代表意義	舉例
指令	使用 <code>ls -l</code> 來列出所有的檔案。
檔名	編輯 <code>.login</code> 。
螢幕上會出現的訊息	<code>You have mail.</code>
輸入指令後，螢幕上會出現的對應內容。	<code>% date +"The time is %H:%M"</code> <code>The time is 09:18</code>
要參考的線上手冊	使用 <code>su(1)</code> 來切換帳號。
使用者名稱和群組名稱	只有 <code>root</code> 才可以做這件事。
語氣的強調。	使用者必須這樣做
打指令時，可替換的部份	要搜尋線上手冊的關鍵字，請輸入 <code>man -k ###</code>
環境變數。	<code>\$HOME</code> 是指帳號的家目錄所在處。

## 3. 注意、技巧、重要訊息、警告、與範例的運用。

出現在本文中的注意、警告、與範例。



### 注意

注意：表示需要注意的事項，其中包括您需要注意的事情，因為這些事情可能會影響到操作結果。



### 提示

提示：提供可能對您有用的資訊，例如簡化操作方式的技巧說明。



### 重要

重要：表示要特別注意的事情。一般來說，它們會包括操作指令時需要加的額外參數。



### 警告

警告：表示警告事項，比如如果您不則可能導致的損失。這些損失可能是對您或硬體造成實際傷害，也可能是無法估計的損害，例如一時疏忽而刪除重要檔案...

### 範例 1. 一個範例

這是舉例說明而已，通常包含應遵循的指令範例，或顯示某些特定動作所可能發生的結果。

## 4. 感謝

在此要感謝 Sue Blake, Patrick Durusau, Jon Hamilton, Peter Flynn, Christopher Maden 這些人的協助與閱讀初期草稿，並提供許多寶貴的潤稿意見與評論。

# 章 1. 概論

歡迎參與 FreeBSD 文件計劃( 簡稱 FDP )。維持優秀質量的文件對 FreeBSD 的成功來說十分重要，您的點滴貢獻都是十分寶貴的。

本文件描述：『FDP 的架構有哪些』、『如何撰寫並提交文件』、『如何有效運用工具來協助撰稿』。

歡迎大家對 FDP 做出貢獻。唯一的成員要求就有貢獻的意願。

本入門書指出如何：

- 瞭解有哪些文件是由 FDP 所維護的。
- 安裝所需的文件工具和檔案
- 修改文件
- 提交修改以供審核並納入 FreeBSD 文件

## 1.1. 快速上手

在編輯 FreeBSD 文件之前，有一些準備工作要做。首先，請訂閱 [FreeBSD 文件計劃郵件論壇](#)。有些團隊成員也會出現在 [EFnet](#) 的 [#bsddocs](#) IRC 頻道。這些人可以幫忙解決文件相關的問題。

1. 安裝 [textproc/docproj](#) 套件或 port。這個 meta-port 會安裝所有編輯和建構 FreeBSD 文件需要的軟體。
2. 在 `~/doc` 安裝 FreeBSD 文件庫的本地端工作副本(請見 [章 3, 工作副本](#))。

```
% svn checkout https://svn.FreeBSD.org/doc/head ~/doc
```

3. 設定文字編輯器：
  - Word wrap 設為 70 個字元。
  - Tab stops 設成。
  - 將句首每八個空白以一個 tab 替換。

特定編輯器的設定方式列於 [章 14, Editor Configuration](#)。

4. 更新本地端工作副本

```
% svn up ~/doc
```

5. 編輯需要修改的文件檔案。如果檔案需要大幅度的編修，請先諮詢郵件論壇。  
標籤 (tag) 和 entity 的使用方式可以參考 [章 8, XHTML Markup](#) 和 [章 9, DocBook Markup](#)。

6. 編輯完後，執行以下指令來檢查是否有問題：

```
% igor -R filename.xml | less -RS
```

檢查輸出並重新編輯檔案來修正顯示的錯誤，然後重新執行指令來找出剩下的問題。重複執行直到所有錯誤都解決完。

7. 修正送出前請先建構測試 (build-test)。在編輯的文件目錄最頂層執行 **make**，將會產生 split HTML 格式的文件。例如要建構 HTML 格式的英文版使用手冊，請在 `en_US.ISO8859-1/books/handbook/` 目錄執行 **make**。

8. 修改並測試完後，產生“diff 檔”：

```
% cd ~/doc
% svn diff > bsdinstall.diff.txt
```

設一個可辨識的檔名。如上例中，是使用手冊的**bsdinstall** 部份的修改。

9. 使用網頁版 [Problem Report](#) 系統提交 diff 檔。如果使用網頁版，請輸入 [修正檔] ##### 的概要。選擇 **docs** 分類和 **doc-bug** 類別。在訊息的主體中，輸入修正的簡短描述和其他相關的重要的細節。使用 [Browse...] 按鈕來附加 diff 檔。

## 1.2. FreeBSD 文件組

FDP 負責四類 FreeBSD 文件

- 使用手冊：使用手冊主要是給 FreeBSD 使用者提供詳盡的線上參考資料。
- FAQ 主要是收集在各郵件論壇或論壇會常問到或有可能會問到的 FreeBSD 相關問題與答案。（簡單講，就是『問答集』格式）通常會擺在這裡面的問答格式，不會放太長的詳細內容。
- 線上手冊 (manual pages): 英文版的系統 manual 並不是由 FDP 所撰寫的，因為它們是屬於 base system 的部份。然而，FDP 可以修改這些文件，來讓這些文件寫得更清楚，甚至是勘正錯誤的地方。
- 網站: 這是 FreeBSD 在網路上的主要部份，位於 <http://www.FreeBSD.org/> 以及許多其他 mirror 站。這網站是許多人第一次接觸 FreeBSD 的地方

翻譯團隊負責翻譯使用手冊和網站到不同的語言。線上手冊目前並未翻譯

FreeBSD 網站、使用手冊、和 FAQ 的文件原始碼可以在 <https://svn.FreeBSD.org/doc/> 的文件庫取得。

線上手冊的原始碼則是在 <https://svn.FreeBSD.org/base/> 的原始碼庫可以取得。

文件提交訊息可以用 `svn log` 察看。提交訊息也會保存在 <http://lists.FreeBSD.org/mailman/listinfo/svn-doc-all>。

這些儲存庫的網頁版位於 <https://svnweb.FreeBSD.org/doc/> 和 <https://svnweb.FreeBSD.org/base/>。

許多人會寫 FreeBSD 的教學文件或是 how-to 文章。有些保存在 FDP 的檔案中。其他一些文件則是作者希望放在他處。FDP 會盡力提供這些文件的連結。

# 章 2. 工具

有些工具軟體用來管理 FreeBSD 文件，並將他轉換成不同的輸出格式。有些則是在使用接下來章節的範例之前一定要安裝。有些工具是選擇性安裝的，但是裝了之後會更容易進行文件製作工作。

## 2.1. 必備工具

從 Ports Collection 安裝 [textproc/docproj](#)。這個組合型 port (meta-port) 會安裝處理 FreeBSD 文件需要的所有應用程式。以下列出特定元件的進一步說明。

### 2.1.1. DTDs 與 Entities

FreeBSD 文件使用幾種文件類型定義 (DTDs) 與 XML entities 組。這些都會經由 [textproc/docproj](#) port 來安裝。

#### XHTML DTD ([textproc/xhtml](#))

XHTML 是全球資訊網的一種標記語言，也是整個 FreeBSD 網站所使用的格式。

#### DocBook DTD ([textproc/docbook-xml](#))

DocBook 設計來製作技術文件的標記語言版本。FreeBSD 文件是以 DocBook 來撰寫。

#### ISO 8879 entities ([textproc/iso8879](#))

在 ISO 8879:1986 之中的 entity 被許多 DTD 所大量使用，包括了數學符號、拉丁字母符號(尖重音等音節符號也是)以及希臘符號。

## 2.2. 輔助工具

不一定得裝下列的應用程式才行，但是，出的格式也更具彈性。

### 2.2.1. 軟體

#### Vim ([editors/vim](#))

一個很受歡迎的編輯器，可以處理 XML 和他的衍生相關文件，例如 DocBook XML。

#### Emacs 或 XEmacs ([editors/emacs](#) 或 [editors/xemacs](#))

這兩個編輯器都包含特別模式來編輯用 XML DTD 標記的文件。這個模式包含指令來減少打字量，並可以幫忙減少錯誤的發生。



## 章 3. 工作副本

The working copy is a copy of the FreeBSD repository documentation tree downloaded onto the local computer. Changes are made to the local working copy, tested, and then submitted as patches to be committed to the main repository.

A full copy of the documentation tree can occupy 700 megabytes of disk space. Allow for a full gigabyte of space to have room for temporary files and test versions of various output formats.

[Subversion](#) is used to manage the FreeBSD documentation files. It is installed by [textproc/docproj](#) as one of the required applications.

### 3.1. Documentation and Manual Pages

FreeBSD documentation is not just books and articles. Manual pages for all the commands and configuration files are also part of the documentation, and part of the FDP's territory. Two repositories are involved: **doc** for the books and articles, and **base** for the operating system and manual pages. To edit manual pages, the **base** repository must be checked out separately.

Repositories may contain multiple versions of documentation and source code. New modifications are almost always made only to the latest version, called **head**.

### 3.2. Choosing a Directory

FreeBSD documentation is traditionally stored in `/usr/doc/`, and system source code with manual pages in `/usr/src/`. These directory trees are relocatable, and users may want to put the working copies in other locations to avoid interfering with existing information in the main directories. The examples that follow use `~/doc` and `~/src`, both subdirectories of the user's home directory.

### 3.3. Checking Out a Copy

A download of a working copy from the repository is called a checkout, and done with `svn checkout`. This example checks out a copy of the latest version (**head**) of the main documentation tree:

```
% svn checkout https://svn.FreeBSD.org/doc/head ~/doc
```

A checkout of the source code to work on manual pages is very similar:

```
% svn checkout https://svn.FreeBSD.org/base/head ~/src
```

### 3.4. Updating a Working Copy

The documents and files in the FreeBSD repository change daily. People modify files and commit changes frequently. Even a short time after an initial checkout, there will already be differences between the local working copy and the main FreeBSD repository. To update the local version with the changes that have been made to the main repository, use `svn update` on the directory containing the local working copy:

```
% svn update ~/doc
```

Get in the protective habit of using `svn update` before editing document files. Someone else may have edited that file very recently, and the local working copy will not include the latest changes until it has been updated.

Editing the newest version of a file is much easier than trying to combine an older, edited local file with the newer version from the repository.

### 3.5. Reverting Changes

Sometimes it turns out that changes were not necessary after all, or the writer just wants to start over. Files can be “reset” to their unchanged form with `svn revert`. For example, to erase the edits made to `chapter.xml` and reset it to unmodified form:

```
% svn revert chapter.xml
```

### 3.6. Making a Diff

After edits to a file or group of files are completed, the differences between the local working copy and the version on the FreeBSD repository must be collected into a single file for submission. These diff files are produced by redirecting the output of `svn diff` into a file:

```
% cd ~/doc  
% svn diff > doc-fix-spelling.diff
```

Give the file a meaningful name that identifies the contents. The example above is for spelling fixes to the whole documentation tree.

If the diff file is to be submitted with the web “[Submit a FreeBSD problem report](#)” interface, add a `.txt` extension to give the earnest and simple-minded web form a clue that the contents are plain text.

Be careful: `svn diff` includes all changes made in the current directory and any subdirectories. If there are files in the working copy with edits that are not ready to be submitted yet, provide a list of only the files that are to be included:

```
% cd ~/doc  
% svn diff disks/chapter.xml printers/chapter.xml > disks-printers.diff
```

### 3.7. Subversion References

These examples show very basic usage of Subversion. More detail is available in the [Subversion Book](#) and the [Subversion documentation](#).



# 章 4. Documentation Directory Structure

Files and directories in the `doc/` tree follow a structure meant to:

1. Make it easy to automate converting the document to other formats.
2. Promote consistency between the different documentation organizations, to make it easier to switch between working on different documents.
3. Make it easy to decide where in the tree new documentation should be placed.

In addition, the documentation tree must accommodate documents in many different languages and encodings. It is important that the documentation tree structure does not enforce any particular defaults or cultural preferences.

## 4.1. The Top Level, `doc/`

There are two types of directory under `doc/`, each with very specific directory names and meanings.

Directory	Usage
<code>share</code>	Contains files that are not specific to the various translations and encodings of the documentation. Contains subdirectories to further categorize the information. For example, the files that comprise the <a href="#">make(1)</a> infrastructure are in <code>share/mk</code> , while the additional XML support files (such as the FreeBSD extended DocBook DTD) are in <code>share/xml</code> .
<code>lang.encoding</code>	One directory exists for each available translation and encoding of the documentation, for example <code>en_US.ISO8859-1/</code> and <code>zh_TW.UTF-8/</code> . The names are long, but by fully specifying the language and encoding we prevent any future headaches when a translation team wants to provide documentation in the same language but in more than one encoding. This also avoids problems that might be caused by a future switch to Unicode.

## 4.2. The `lang.encoding /` Directories

These directories contain the documents themselves. The documentation is split into up to three more categories at this level, indicated by the different directory names.

Directory	Usage
<code>articles</code>	Documentation marked up as a DocBook <b>article</b> (or equivalent). Reasonably short, and broken up into sections. Normally only available as one XHTML file.
<code>books</code>	Documentation marked up as a DocBook <b>book</b> (or equivalent). Book length, and broken up into chapters. Normally available as both one large XHTML file (for people with fast connections, or who want to print it

Directory	Usage
	easily from a browser) and as a collection of linked, smaller files.
man	For translations of the system manual pages. This directory will contain one or more <code>man/</code> directories, corresponding to the sections that have been translated.

Not every *lang.encoding* directory will have all of these subdirectories. It depends on how much translation has been accomplished by that translation team.

## 4.3. Document-Specific Information

This section contains specific notes about particular documents managed by the FDP.

### 4.3.1. The Handbook

books/handbook/

The Handbook is written in DocBook XML using the FreeBSD DocBook extended DTD.

The Handbook is organized as a DocBook **book**. The book is divided into **parts**, each of which contains several **chapter s**. **chapter s** are further subdivided into sections (**sect1**) and subsections (**sect2**, **sect3**) and so on.

#### 4.3.1.1. Physical Organization

There are a number of files and directories within the **handbook** directory.



#### 注意

The Handbook's organization may change over time, and this document may lag in detailing the organizational changes. Post questions about Handbook organization to the [FreeBSD documentation project mailing list](#).

#### 4.3.1.1.1. Makefile

The **Makefile** defines some variables that affect how the XML source is converted to other formats, and lists the various source files that make up the Handbook. It then includes the standard `doc.project.mk`, to bring in the rest of the code that handles converting documents from one format to another.

#### 4.3.1.1.2. book.xml

This is the top level document in the Handbook. It contains the Handbook's **DOCTYPE declaration**, as well as the elements that describe the Handbook's structure.

`book.xml` uses **parameter entities** to load in the files with the `.ent` extension. These files (described later) then define **general entities** that are used throughout the rest of the Handbook.

#### 4.3.1.1.3. directory/chapter.xml

Each chapter in the Handbook is stored in a file called `chapter.xml` in a separate directory from the other chapters. Each directory is named after the value of the `id` attribute on the `chapter` element.

For example, if one of the chapter files contains:

```
<chapter id="kernelconfig">
...
</chapter>
```

Then it will be called `chapter.xml` in the `kernelconfig` directory. In general, the entire contents of the chapter are in this one file.

When the XHTML version of the Handbook is produced, this will yield `kernelconfig.html`. This is because of the `id` value, and is not related to the name of the directory.

In earlier versions of the Handbook, the files were stored in the same directory as `book.xml`, and named after the value of the `id` attribute on the file's `chapter` element. Now, it is possible to include images in each chapter. Images for each Handbook chapter are stored within `share/images/books/handbook`. The localized version of these images should be placed in the same directory as the XML sources for each chapter. Namespace collisions are inevitable, and it is easier to work with several directories with a few files in them than it is to work with one directory that has many files in it.

A brief look will show that there are many directories with individual `chapter.xml` files, including `basics/chapter.xml`, `introduction/chapter.xml`, and `printing/chapter.xml`.



### 重要

Do not name chapters or directories after their ordering within the Handbook. This ordering can change as the content within the Handbook is reorganized. Reorganization should be possible without renaming files, unless entire chapters are being promoted or demoted within the hierarchy.

The `chapter.xml` files are not complete XML documents that can be built individually. They can only be built as parts of the whole Handbook.



# 章 5. The Documentation Build Process

This chapter covers organization of the documentation build process and how [make\(1\)](#) is used to control it.

## 5.1. Rendering DocBook into Output

Different types of output can be produced from a single DocBook source file. The type of output desired is set with the `FORMATS` variable. A list of known formats is stored in `KNOWN_FORMATS` :

```
% cd ~/doc/en_US.IS08859-1/books/handbook
% make -V KNOWN_FORMATS
```

表格 5.1. Common Output Formats

FORMATS Value	File Type	Description
html	HTML, one file	A single <code>book.html</code> or <code>article.html</code> .
html-split	HTML, multiple files	Multiple HTML files, one for each chapter or section, for use on a typical web site.
pdf	PDF	Portable Document Format

The default output format can vary by document, but is usually `html-split`. Other formats are chosen by setting `FORMATS` to a specific value. Multiple output formats can be created at a single time by setting `FORMATS` to a list of formats.

### 範例 5.1. Build a Single HTML Output File

```
% cd ~/doc/en_US.IS08859-1/books/handbook
% make FORMATS=html
```

### 範例 5.2. Build HTML-Split and PDF Output Files

```
% cd ~/doc/en_US.IS08859-1/books/handbook
% make FORMATS="html-split pdf"
```

## 5.2. The FreeBSD Documentation Build Toolset

These are the tools used to build and install the FDP documentation.

- The primary build tool is [make\(1\)](#), specifically Berkeley Make.
- Package building is handled by FreeBSD's [pkg-create\(8\)](#).

- `gzip(1)` is used to create compressed versions of the document. `bzip2(1)` archives are also supported. `tar(1)` is used for package building.
- `install(1)` is used to install the documentation.

## 5.3. Understanding Makefiles in the Documentation Tree

There are three main types of `Makefile`s in the FreeBSD Documentation Project tree.

- `Subdirectory Makefile`s simply pass commands to those directories below them.
- `Documentation Makefile`s describe the documents that are produced from this directory.
- `Make includes` are the glue that perform the document production, and are usually of the form `doc.xxx.mk`.

### 5.3.1. Subdirectory Makefiles

These `Makefile`s usually take the form of:

```
SUBDIR =articles
SUBDIR+=books

COMPAT_SYMLINK = en

DOC_PREFIX?= ${.CURDIR}/..
.include "${DOC_PREFIX}/share/mk/doc.project.mk"
```

The first four non-empty lines define the `make(1)` variables `SUBDIR`, `COMPAT_SYMLINK`, and `DOC_PREFIX`.

The `SUBDIR` statement and `COMPAT_SYMLINK` statement show how to assign a value to a variable, overriding any previous value.

The second `SUBDIR` statement shows how a value is appended to the current value of a variable. The `SUBDIR` variable is now `articles books`.

The `DOC_PREFIX` assignment shows how a value is assigned to the variable, but only if it is not already defined. This is useful if `DOC_PREFIX` is not where this `Makefile` thinks it is - the user can override this and provide the correct value.

What does it all mean? `SUBDIR` mentions which subdirectories below this one the build process should pass any work on to.

`COMPAT_SYMLINK` is specific to compatibility symlinks (amazingly enough) for languages to their official encoding (`doc/en` would point to `en_US.ISO-8859-1`).

`DOC_PREFIX` is the path to the root of the FreeBSD Document Project tree. This is not always that easy to find, and is also easily overridden, to allow for flexibility. `.CURDIR` is a `make(1)` builtin variable with the path to the current directory.

The final line includes the FreeBSD Documentation Project's project-wide `make(1)` system file `doc.project.mk` which is the glue which converts these variables into build instructions.

### 5.3.2. Documentation Makefiles

These `Makefile`s set `make(1)` variables that describe how to build the documentation contained in that directory.

Here is an example:

```
MAINTAINER=nik@FreeBSD.org
```

```
DOC?= book

FORMATS?= html-split html

INSTALL_COMPRESSED?= gz
INSTALL_ONLY_COMPRESSED?=

# SGML content
SRCS= book.xml

DOC_PREFIX?= ${.CURDIR}/../..

.include "$(DOC_PREFIX)/share/mk/docproj.docbook.mk"
```

The `MAINTAINER` variable allows committers to claim ownership of a document in the FreeBSD Documentation Project, and take responsibility for maintaining it.

`DOC` is the name (sans the `.xml` extension) of the main document created by this directory. `SRCS` lists all the individual files that make up the document. This should also include important files in which a change should result in a rebuild.

`FORMATS` indicates the default formats that should be built for this document. `INSTALL_COMPRESSED` is the default list of compression techniques that should be used in the document build. `INSTALL_ONLY_COMPRESS`, empty by default, should be non-empty if only compressed documents are desired in the build.

The `DOC_PREFIX` and include statements should be familiar already.

## 5.4. FreeBSD Documentation Project Make Includes

[make\(1\)](#) includes are best explained by inspection of the code. Here are the system include files:

- `doc.project.mk` is the main project include file, which includes all the following include files, as necessary.
- `doc.subdir.mk` handles traversing of the document tree during the build and install processes.
- `doc.install.mk` provides variables that affect ownership and installation of documents.
- `doc.docbook.mk` is included if `DOCFORMAT` is `docbook` and `DOC` is set.

### 5.4.1. doc.project.mk

By inspection:

```
DOCFORMAT?= docbook
MAINTAINER?= doc@FreeBSD.org

PREFIX?= /usr/local
PRI_LANG?= en_US.ISO8859-1

.if defined(DOC)
.if ${DOCFORMAT} == "docbook"
.include "doc.docbook.mk"
.endif
.endif

.include "doc.subdir.mk"
.include "doc.install.mk"
```

#### 5.4.1.1. Variables

`DOCFORMAT` and `MAINTAINER` are assigned default values, if these are not set by the document make file.

`PREFIX` is the prefix under which the [documentation building tools](#) are installed. For normal package and port installation, this is `/usr/local`.

`PRI_LANG` should be set to whatever language and encoding is natural amongst users these documents are being built for. US English is the default.



### 注意

`PRI_LANG` does not affect which documents can, or even will, be built. Its main use is creating links to commonly referenced documents into the FreeBSD documentation install root.

#### 5.4.1.2. Conditionals

The `.if defined(DOC)` line is an example of a [make\(1\)](#) conditional which, like in other programs, defines behavior if some condition is true or if it is false. `defined` is a function which returns whether the variable given is defined or not.

`.if ${DOCFORMAT} == "docbook"`, next, tests whether the `DOCFORMAT` variable is `"docbook"`, and in this case, includes `doc.docbook.mk`.

The two `.endif`s close the two above conditionals, marking the end of their application.

#### 5.4.2. doc.subdir.mk

This file is too long to explain in detail. These notes describe the most important features.

##### 5.4.2.1. Variables

- `SUBDIR` is a list of subdirectories that the build process should go further down into.
- `ROOT_SYMLINKS` is the name of directories that should be linked to the document install root from their actual locations, if the current language is the primary language (specified by `PRI_LANG`).
- `COMPAT_SYMLINK` is described in the [Subdirectory Makefile](#) section.

##### 5.4.2.2. Targets and Macros

Dependencies are described by `target: dependency1 dependency2 ...` tuples, where to build `target`, the given dependencies must be built first.

After that descriptive tuple, instructions on how to build the target may be given, if the conversion process between the target and its dependencies are not previously defined, or if this particular conversion is not the same as the default conversion method.

A special dependency `.USE` defines the equivalent of a macro.

```
_SUBDIRUSE: .USE
.for entry in ${SUBDIR}
@${ECHO} "====> ${DIRPRFX}${entry}"
@(cd ${.CURDIR}/${entry} && \
${MAKE} ${.TARGET:S/realpackage/package/:S/realinstall/install/} DIRPRFX=
${DIRPRFX}${entry}/ )
.endfor
```

In the above, `_SUBDIRUSE` is now a macro which will execute the given commands when it is listed as a dependency.



What sets this macro apart from other targets? Basically, it is executed after the instructions given in the build procedure it is listed as a dependency to, and it does not adjust `.TARGET`, which is the variable which contains the name of the target currently being built.

```
clean: _SUBDIRUSE
rm -f ${CLEANFILES}
```

In the above, `clean` will use the `_SUBDIRUSE` macro after it has executed the instruction `rm -f ${CLEANFILES}`. In effect, this causes `clean` to go further and further down the directory tree, deleting built files as it goes down, not on the way back up.

#### 5.4.2.2.1. Provided Targets

- `install` and `package` both go down the directory tree calling the real versions of themselves in the subdirectories (`realinstall` and `realpackage` respectively).
- `clean` removes files created by the build process (and goes down the directory tree too). `cleandir` does the same, and also removes the object directory, if any.

#### 5.4.2.3. More on Conditionals

- `exists` is another condition function which returns true if the given file exists.
- `empty` returns true if the given variable is empty.
- `target` returns true if the given target does not already exist.

#### 5.4.2.4. Looping Constructs in make ( `.for` )

`.for` provides a way to repeat a set of instructions for each space-separated element in a variable. It does this by assigning a variable to contain the current element in the list being examined.

```
_SUBDIRUSE: .USE
.for entry in ${SUBDIR}
@${ECHO} "====> ${DIRPRFX}${entry}"
@(cd ${.CURDIR}/${entry} && \
 ${MAKE} ${.TARGET:S/realpackage/package/:S/realinstall/install/} DIRPRFX=
${DIRPRFX}${entry}/ )
.endfor
```

In the above, if `SUBDIR` is empty, no action is taken; if it has one or more elements, the instructions between `.for` and `.endfor` would repeat for every element, with `entry` being replaced with the value of the current element.



# 章 6. 網站

FreeBSD 網站是 FreeBSD 文件的一部份。網站的檔案儲存在文件樹目錄，此例中是 `~/doc`，的 `en_US.ISO8859-1/htdocs` 子目錄。

## 6.1. 環境變數

有些環境變數控制網站的建構或安裝，和裝到哪個目錄



### 提示

The web build system uses `make(1)`, and considers variables to be set when they have been defined, even if they are empty. The examples here show the recommended ways of defining and using these variables. Setting or defining these variables with other values or methods might lead to unexpected surprises.

### DESTDIR

DESTDIR specifies the path where the web site files are to be installed.

This variable is best set with `env(1)` or the user shell's method of setting environment variables, `setenv` for `csh(1)` or `export` for `sh(1)`.

### ENGLISH\_ONLY

Default: undefined. Build and include all translations.

**ENGLISH\_ONLY=yes** : use only the English documents and ignore all translations.

### WEB\_ONLY

Default: undefined. Build both the web site and all the books and articles.

**WEB\_ONLY=yes** : build or install only HTML pages from the `en_US.ISO8859-1/htdocs` directory. Other directories and documents, including books and articles, will be ignored.

### WEB\_LANG

Default: undefined. Build and include all the available languages on the web site.

Set to a space-separated list of languages to be included in the build or install. The formats are the same as the directory names in the document root directory. For example, to include the German and French documents:

```
WEB_LANG="de_DE.ISO8859-1 fr_FR.ISO8859-1"
```

`WEB_ONLY`, `WEB_LANG`, and `ENGLISH_ONLY` are `make(1)` variables and can be set in `/etc/make.conf`, `Makefile.inc`, as environment variables on the command line, or in dot files.

## 6.2. Building and Installing the Web Pages

Having obtained the documentation and web site source files, the web site can be built.

An actual installation of the web site is run as the `root` user because the permissions on the web server directory will not allow files to be installed by an unprivileged user. For testing, it can be useful to install the files as a normal user to a temporary directory.

In these examples, the web site files are built by user `j ru` in their home directory, `~/doc`, with a full path of `/usr/home/j ru/doc`.



### 提示

The web site build uses the **INDEX** from the Ports Collection and might fail if that file or `/usr/ports` is not present. The simplest approach is to install the [Ports Collection](#).

## 範例 6.1. Build the Full Web Site and All Documents

Build the web site and all documents. The resulting files are left in the document tree:

```
% cd ~/doc/en_US.IS08859-1/htdocs/
% make all
```

## 範例 6.2. Build Only the Web Site in English

Build the web site only, in English, as user `j ru`, and install the resulting files into `/tmp/www` for testing:

```
% cd ~/doc/en_US.IS08859-1/htdocs/
% env DESTDIR=/tmp/www make ENGLISH_ONLY=yes WEB_ONLY=yes all &
install
```

Changes to static files can usually be tested by viewing the modified files directly with a web browser. If the site has been built as shown above, a modified main page can be viewed with:

```
% firefox /tmp/www/data/index.html
```

Modifications to dynamic files can be tested with a web server running on the local system. After building the site as shown above, this `/usr/local/etc/apache24/httpd.conf` can be used with [www/apache24](#):

```
# httpd.conf for testing the FreeBSD website
Define TestRoot "/tmp/www/data"

# directory for configuration files
ServerRoot "/usr/local"

Listen 80

# minimum required modules
LoadModule authz_core_module libexec/apache24/mod_authz_core.so
LoadModule mime_module libexec/apache24/mod_mime.so
LoadModule unixd_module libexec/apache24/mod_unixd.so
LoadModule cgi_module libexec/apache24/mod_cgi.so
LoadModule dir_module libexec/apache24/mod_dir.so

# run the webserver as user and group
User www
Group www
```

```

ServerAdmin you@example.com
ServerName fbsdtest

# deny access to all files
<Directory />
    AllowOverride none
    Require all denied
</Directory>

# allow access to the website directory
DocumentRoot "${TestRoot}"
<Directory "${TestRoot}">
    Options Indexes FollowSymLinks
    AllowOverride None
    Require all granted
</Directory>

# prevent access to .htaccess and .htpasswd files
<Files ".ht*">
    Require all denied
</Files>

ErrorLog "/var/log/httpd-error.log"
LogLevel warn

# set up the CGI script directory
<Directory "${TestRoot}/cgi">
    AllowOverride None
    Options None
    Require all granted
    Options +ExecCGI
    AddHandler cgi-script .cgi
</Directory>

Include etc/apache24/Includes/*.conf

```

Start the web server with

```
# service apache24 onestart
```

The web site can be viewed at <http://localhost>. Be aware that many links refer to the real FreeBSD site by name, and those links will still go to the external site instead of the local test version. Fully testing the local site will require temporarily setting DNS so `www.FreeBSD.org` resolves to `localhost` or the local IP address.

### 範例 6.3. Build and Install the Web Site

Build the web site and all documents as user `jru`. Install the resulting files as `root` into the default directory, `/root/public_html` :

```

% cd ~/doc/en_US.IS08859-1/htdocs
% make all
% su -
Password:
# cd /usr/home/jru/doc/en_US.IS08859-1/htdocs
# make install

```

The install process does not delete any old or outdated files that existed previously in the same directory. If a new copy of the site is built and installed every day, this command will find and delete all files that have not been updated in three days:

```
# find /usr/local/www -ctime 3 -delete
```

# 章 7. XML Primer

Most FDP documentation is written with markup languages based on XML. This chapter explains what that means, how to read and understand the documentation source, and the XML techniques used.

Portions of this section were inspired by Mark Galassi's [Get Going With DocBook](#).

## 7.1. 概論

In the original days of computers, electronic text was simple. There were a few character sets like ASCII or EBCDIC, but that was about it. Text was text, and what you saw really was what you got. No frills, no formatting, no intelligence.

Inevitably, this was not enough. When text is in a machine-usable format, machines are expected to be able to use and manipulate it intelligently. Authors want to indicate that certain phrases should be emphasized, or added to a glossary, or made into hyperlinks. Filenames could be shown in a “typewriter” style font for viewing on screen, but as “italics” when printed, or any of a myriad of other options for presentation.

It was once hoped that Artificial Intelligence (AI) would make this easy. The computer would read the document and automatically identify key phrases, filenames, text that the reader should type in, examples, and more. Unfortunately, real life has not happened quite like that, and computers still require assistance before they can meaningfully process text.

More precisely, they need help identifying what is what. Consider this text:

```
To remove /tmp/foo , use rm(1).
```

```
% rm /tmp/foo
```

It is easy to see which parts are filenames, which are commands to be typed in, which parts are references to manual pages, and so on. But the computer processing the document cannot. For this we need markup.

“Markup” is commonly used to describe “adding value” or “increasing cost”. The term takes on both these meanings when applied to text. Markup is additional text included in the document, distinguished from the document's content in some way, so that programs that process the document can read the markup and use it when making decisions about the document. Editors can hide the markup from the user, so the user is not distracted by it.

The extra information stored in the markup adds value to the document. Adding the markup to the document must typically be done by a person—after all, if computers could recognize the text sufficiently well to add the markup then there would be no need to add it in the first place. This increases the cost (the effort required) to create the document.

The previous example is actually represented in this document like this:

```
<para>To remove <filename> /tmp/foo</filename> , use &man.rm.1;.</para>  
<screen>&prompt.user; <userinput> rm /tmp/foo</userinput> </screen>
```

The markup is clearly separate from the content.

Markup languages define what the markup means and how it should be interpreted.

Of course, one markup language might not be enough. A markup language for technical documentation has very different requirements than a markup language that is intended for cookery recipes. This, in turn, would be very different from a markup language used to describe poetry. What is really needed is a first language used to write these other markup languages. A meta markup language.

This is exactly what the eXtensible Markup Language (XML) is. Many markup languages have been written in XML, including the two most used by the FDP, XHTML and DocBook.

Each language definition is more properly called a grammar, vocabulary, schema or Document Type Definition (DTD). There are various languages to specify an XML grammar, or schema.

A schema is a complete specification of all the elements that are allowed to appear, the order in which they should appear, which elements are mandatory, which are optional, and so forth. This makes it possible to write an XML parser which reads in both the schema and a document which claims to conform to the schema. The parser can then confirm whether or not all the elements required by the vocabulary are in the document in the right order, and whether there are any errors in the markup. This is normally referred to as “validating the document”.



### 注意

Validation confirms that the choice of elements, their ordering, and so on, conforms to that listed in the grammar. It does not check whether appropriate markup has been used for the content. If all the filenames in a document were marked up as function names, the parser would not flag this as an error (assuming, of course, that the schema defines elements for filenames and functions, and that they are allowed to appear in the same place).

Most contributions to the Documentation Project will be content marked up in either XHTML or DocBook, rather than alterations to the schemas. For this reason, this book will not touch on how to write a vocabulary.

## 7.2. Elements, Tags, and Attributes

All the vocabularies written in XML share certain characteristics. This is hardly surprising, as the philosophy behind XML will inevitably show through. One of the most obvious manifestations of this philosophy is that of content and elements.

Documentation, whether it is a single web page, or a lengthy book, is considered to consist of content. This content is then divided and further subdivided into elements. The purpose of adding markup is to name and identify the boundaries of these elements for further processing.

For example, consider a typical book. At the very top level, the book is itself an element. This “book” element obviously contains chapters, which can be considered to be elements in their own right. Each chapter will contain more elements, such as paragraphs, quotations, and footnotes. Each paragraph might contain further elements, identifying content that was direct speech, or the name of a character in the story.

It may be helpful to think of this as “chunking” content. At the very top level is one chunk, the book. Look a little deeper, and there are more chunks, the individual chapters. These are chunked further into paragraphs, footnotes, character names, and so on.

Notice how this differentiation between different elements of the content can be made without resorting to any XML terms. It really is surprisingly straightforward. This could be done with a highlighter pen and a printout of the book, using different colors to indicate different chunks of content.

Of course, we do not have an electronic highlighter pen, so we need some other way of indicating which element each piece of content belongs to. In languages written in XML (XHTML, DocBook, et al) this is done by means of tags.

A tag is used to identify where a particular element starts, and where the element ends. The tag is not part of the element itself. Because each grammar was normally written to mark up specific types of information, each one will recognize different elements, and will therefore have different names for the tags.

For an element called *element-name* the start tag will normally look like `<element-name >`. The corresponding closing tag for this element is `</element-name >`.



### 範例 7.1. Using an Element (Start and End Tags)

XHTML has an element for indicating that the content enclosed by the element is a paragraph, called `p`.

```
<p>This is a paragraph. It starts with the start tag for
the 'p' element, and it will end with the end tag for the 'p'
element.</p>

<p>This is another paragraph. But this one is much shorter.</p>
```

Some elements have no content. For example, in XHTML, a horizontal line can be included in the document. For these “empty” elements, XML introduced a shorthand form that is completely equivalent to the two-tag version:

### 範例 7.2. Using an Element Without Content

XHTML has an element for indicating a horizontal rule, called `hr`. This element does not wrap content, so it looks like this:

```
<p>One paragraph.</p>
<hr></hr>

<p>This is another paragraph. A horizontal rule separates this
from the previous paragraph.</p>
```

The shorthand version consists of a single tag:

```
<p>One paragraph.</p>
<hr/>

<p>This is another paragraph. A horizontal rule separates this
from the previous paragraph.</p>
```

As shown above, elements can contain other elements. In the book example earlier, the book element contained all the chapter elements, which in turn contained all the paragraph elements, and so on.

### 範例 7.3. Elements Within Elements; `em`

```
<p>This is a simple <em>paragraph</em> where some
of the <em>words</em> have been <em>emphasized</em>.</p>
```

The grammar consists of rules that describe which elements can contain other elements, and exactly what they can contain.



### 重要

People often confuse the terms tags and elements, and use the terms as if they were interchangeable. They are not.

An element is a conceptual part of your document. An element has a defined start and end. The tags mark where the element starts and ends.

When this document (or anyone else knowledgeable about XML) refers to “the `<p>` tag” they mean the literal text consisting of the three characters `<`, `p`, and `>`. But the phrase “the `p` element” refers to the whole element.

This distinction is very subtle. But keep it in mind.

Elements can have attributes. An attribute has a name and a value, and is used for adding extra information to the element. This might be information that indicates how the content should be rendered, or might be something that uniquely identifies that occurrence of the element, or it might be something else.

An element's attributes are written inside the start tag for that element, and take the form *attribute-name*="attribute-value ".

In XHTML, the `p` element has an attribute called `align`, which suggests an alignment (justification) for the paragraph to the program displaying the XHTML.

The `align` attribute can take one of four defined values, `left`, `center`, `right` and `justify`. If the attribute is not specified then the default is `left`.

### 範例 7.4. Using an Element with an Attribute

```
<p align="left"> The inclusion of the align attribute
  on this paragraph was superfluous, since the default is left.</p>
<p align="center"> This may appear in the center.</p>
```

Some attributes only take specific values, such as `left` or `justify`. Others allow any value.

### 範例 7.5. Single Quotes Around Attributes

```
<p align='right'> I am on the right!</p>
```

Attribute values in XML must be enclosed in either single or double quotes. Double quotes are traditional. Single quotes are useful when the attribute value contains double quotes.

Information about attributes, elements, and tags is stored in catalog files. The Documentation Project uses standard DocBook catalogs and includes additional catalogs for FreeBSD-specific features. Paths to the catalog files are defined in an environment variable so they can be found by the document build tools.

### 7.2.1. To Do...

Before running the examples in this document, install [textproc/docproj](#) from the FreeBSD Ports Collection. This is a meta-port that downloads and installs the standard programs and supporting files needed by the Documentation Project. [csh\(1\)](#) users must use `rehash` for the shell to recognize new programs after they have been installed, or log out and then log back in again.

1. Create `example.xml`, and enter this text:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>An Example XHTML File</title>
  </head>

  <body>
    <p>This is a paragraph containing some text.</p>

    <p>This paragraph contains some more text.</p>

    <p align="right"> This paragraph might be right-justified.</p>
  </body>
</html>
```

2. Try to validate this file using an XML parser.

[textproc/docproj](#) includes the `xmllint` validating parser [22].

Use `xmllint` to validate the document:

```
% xmllint --valid --noout example.xml
```

`xmllint` returns without displaying any output, showing that the document validated successfully.

3. See what happens when required elements are omitted. Delete the line with the `<title>` and `</title>` tags, and re-run the validation.

```
% xmllint --valid --noout example.xml
example.xml:5: element head: validity error : Element head content does not follow
the DTD, expecting ((script | style | meta | link | object | isindex)* , ((title ,
(script | style | meta | link | object | isindex)* , (base , (script | style | meta
| link | object | isindex)*?) | (base , (script | style | meta | link | object |
isindex)* , title , (script | style | meta | link | object | isindex)*))), got ()
```

This shows that the validation error comes from the *fifth* line of the `example.xml` file and that the content of the `<head>` is the part which does not follow the rules of the XHTML grammar.

Then `xmllint` shows the line where the error was found and marks the exact character position with a `^` sign.

4. Replace the `title` element.

## 7.3. The DOCTYPE Declaration

The beginning of each document can specify the name of the DTD to which the document conforms. This DOCTYPE declaration is used by XML parsers to identify the DTD and ensure that the document does conform to it.

A typical declaration for a document written to conform with version 1.0 of the XHTML DTD looks like this:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

That line contains a number of different components.

<!

The indicator shows this is an XML declaration.

**DOCTYPE**

Shows that this is an XML declaration of the document type.

**html**

Names the first [element](#) that will appear in the document.

**PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"**

Lists the Formal Public Identifier (FPI) for the DTD to which this document conforms. The XML parser uses this to find the correct DTD when processing this document.

**PUBLIC** is not a part of the FPI, but indicates to the XML processor how to find the DTD referenced in the FPI. Other ways of telling the XML parser how to find the DTD are shown [later](#).

**"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"**

A local filename or a URL to find the DTD.

>

Ends the declaration and returns to the document.

### 7.3.1. Formal Public Identifiers (FPIs)



注意

It is not necessary to know this, but it is useful background, and might help debug problems when the XML processor can not locate the DTD.

FPIs must follow a specific syntax:

```
"Owner//Keyword Description //Language "
```

*Owner*

The owner of the FPI.

The beginning of the string identifies the owner of the FPI. For example, the FPI **"ISO 8879:1986//ENTITIES Greek Symbols//EN"** lists **ISO 8879:1986** as being the owner for the set of entities for Greek symbols. ISO 8879:1986 is the International Organization for Standardization (ISO) number for the SGML standard, the predecessor (and a superset) of XML.

Otherwise, this string will either look like *-//Owner* or *+//Owner* (notice the only difference is the leading + or -).

If the string starts with - then the owner information is unregistered, with a + identifying it as registered.

ISO 9070:1991 defines how registered names are generated. It might be derived from the number of an ISO publication, an ISBN code, or an organization code assigned according to ISO 6523. Additionally, a registration

authority could be created in order to assign registered names. The ISO council delegated this to the American National Standards Institute (ANSI).

Because the FreeBSD Project has not been registered, the owner string is `-//FreeBSD`. As seen in the example, the W3C are not a registered owner either.

### Keyword

There are several keywords that indicate the type of information in the file. Some of the most common keywords are **DTD**, **ELEMENT**, **ENTITIES**, and **TEXT**. **DTD** is used only for DTD files, **ELEMENT** is usually used for DTD fragments that contain only entity or element declarations. **TEXT** is used for XML content (text and tags).

### Description

Any description can be given for the contents of this file. This may include version numbers or any short text that is meaningful and unique for the XML system.

### Language

An ISO two-character code that identifies the native language for the file. **EN** is used for English.

#### 7.3.1.1. catalog Files

With the syntax above, an XML processor needs to have some way of turning the FPI into the name of the file containing the DTD. A catalog file (typically called **catalog**) contains lines that map FPIs to filenames. For example, if the catalog file contained the line:

```
PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "1.0/transitional.dtd"
```

The XML processor knows that the DTD is called `transitional.dtd` in the `1.0` subdirectory of the directory that held `catalog`.

Examine the contents of `/usr/local/share/xml/dtd/xhtml/catalog.xml`. This is the catalog file for the XHTML DTDs that were installed as part of the [textproc/docproj](#) port.

#### 7.3.2. Alternatives to FPIs

Instead of using an FPI to indicate the DTD to which the document conforms (and therefore, which file on the system contains the DTD), the filename can be explicitly specified.

The syntax is slightly different:

```
<!DOCTYPE html SYSTEM "/path/to/file.dtd">
```

The **SYSTEM** keyword indicates that the XML processor should locate the DTD in a system specific fashion. This typically (but not always) means the DTD will be provided as a filename.

Using FPIs is preferred for reasons of portability. If the **SYSTEM** identifier is used, then the DTD must be provided and kept in the same location for everyone.

## 7.4. Escaping Back to XML

Some of the underlying XML syntax can be useful within documents. For example, comments can be included in the document, and will be ignored by the parser. Comments are entered using XML syntax. Other uses for XML syntax will be shown later.

XML sections begin with a `<! tag` and end with a `>`. These sections contain instructions for the parser rather than elements of the document. Everything between these tags is XML syntax. The [DOCTYPE declaration](#) shown earlier is an example of XML syntax included in the document.

## 7.5. Comments

Comments are an XML construct, and are normally only valid inside a DTD. However, as [節 7.4, “Escaping Back to XML”](#) shows, it is possible to use XML syntax within the document.

The delimiter for XML comments is the string “- -”. The first occurrence of this string opens a comment, and the second closes it.

### 範例 7.6. XML Generic Comment

```
<!-- This is inside the comment -->

<!-- This is another comment -->

<!-- This is one way
      of doing multiline comments -->

<!-- This is another way of --
      -- doing multiline comments -->
```

XHTML users may be familiar with different rules for comments. In particular, it is often believed that the string `<!--` opens a comment, and it is only closed by `-->`.

This is not correct. Many web browsers have broken XHTML parsers, and will accept incorrect input as valid. However, the XML parsers used by the Documentation Project are more strict, and will reject documents with that error.

### 範例 7.7. Erroneous XML Comments

```
<!-- This is in the comment --
      THIS IS OUTSIDE THE COMMENT!
-- back inside the comment -->
```

The XML parser will treat this as though it were actually:

```
<!THIS IS OUTSIDE THE COMMENT>
```

That is not valid XML, and may give confusing error messages.

#### 7.5.1. To Do...

1. Add some comments to `example.xml`, and check that the file still validates using `xmllint`.
2. Add some invalid comments to `example.xml`, and see the error messages that `xmllint` gives when it encounters an invalid comment.

## 7.6. Entities

Entities are a mechanism for assigning names to chunks of content. As an XML parser processes a document, any entities it finds are replaced by the content of the entity.

This is a good way to have re-usable, easily changeable chunks of content in XML documents. It is also the only way to include one marked up file inside another using XML.

There are two types of entities for two different situations: general entities and parameter entities.

### 7.6.1. General Entities

General entities are used to assign names to reusable chunks of text. These entities can only be used in the document. They cannot be used in an XML context.

To include the text of a general entity in the document, include *&entity-name* ; in the text. For example, consider a general entity called `current.version` which expands to the current version number of a product. To use it in the document, write:

```
<para>The current version of our product is
  &current.version;.</para>
```

When the version number changes, edit the definition of the general entity, replacing the value. Then reprocess the document.

General entities can also be used to enter characters that could not otherwise be included in an XML document. For example, `<` and `&` cannot normally appear in an XML document. The XML parser sees the `<` symbol as the start of a tag. Likewise, when the `&` symbol is seen, the next text is expected to be an entity name.

These symbols can be included by using two predefined general entities: `&lt;` and `&amp;` .

General entities can only be defined within an XML context. Such definitions are usually done immediately after the DOCTYPE declaration.

#### 範例 7.8. Defining General Entities

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd" [
<!ENTITY current.version "3.0-RELEASE">
<!ENTITY last.version "2.2.7-RELEASE">
]>
```

The DOCTYPE declaration has been extended by adding a square bracket at the end of the first line. The two entities are then defined over the next two lines, the square bracket is closed, and then the DOCTYPE declaration is closed.

The square brackets are necessary to indicate that the DTD indicated by the DOCTYPE declaration is being extended.

### 7.6.2. Parameter Entities

Parameter entities, like [general entities](#), are used to assign names to reusable chunks of text. But parameter entities can only be used within an [XML context](#).

Parameter entity definitions are similar to those for general entities. However, parameter entries are included with *%entity-name* ;. The definition also includes the % between the ENTITY keyword and the name of the entity.

For a mnemonic, think “Parameter entities use the Percent symbol”.

#### 範例 7.9. Defining Parameter Entities

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
```

```
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd" [
<!ENTITY % param.some "some">
<!ENTITY % param.text "text">
<!ENTITY % param.new "%param.some more %param.text">

<!-- %param.new now contains "some more text" -->
]>
```

### 7.6.3. To Do...

1. Add a general entity to `example.xml`.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd" [
<!ENTITY version "1.1">
]>

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>An Example XHTML File</title>
  </head>

  <!-- There may be some comments in here as well -->

  <body>
    <p>This is a paragraph containing some text.</p>

    <p>This paragraph contains some more text.</p>

    <p align="right"> This paragraph might be right-justified.</p>

    <p>The current version of this document is: &version;</p>
  </body>
</html>
```

2. Validate the document using `xmllint`.
3. Load `example.xml` into a web browser. It may have to be copied to `example.html` before the browser recognizes it as an XHTML document.

Older browsers with simple parsers may not render this file as expected. The entity reference `&version;` may not be replaced by the version number, or the XML context closing `>` may not be recognized and instead shown in the output.

4. The solution is to normalize the document with an XML normalizer. The normalizer reads valid XML and writes equally valid XML which has been transformed in some way. One way the normalizer transforms the input is by expanding all the entity references in the document, replacing the entities with the text that they represent.

`xmllint` can be used for this. It also has an option to drop the initial DTD section so that the closing `>` does not confuse browsers:

```
% xmllint --noent --dropdtd example.xml > example.html
```

A normalized copy of the document with entities expanded is produced in `example.html`, ready to load into a web browser.



## 7.7. Using Entities to Include Files

Both [general](#) and [parameter](#) entities are particularly useful for including one file inside another.

### 7.7.1. Using General Entities to Include Files

Consider some content for an XML book organized into files, one file per chapter, called `chapter1.xml` , `chapter2.xml` , and so forth, with a `book.xml` that will contain these chapters.

In order to use the contents of these files as the values for entities, they are declared with the `SYSTEM` keyword. This directs the XML parser to include the contents of the named file as the value of the entity.

#### 範例 7.10. Using General Entities to Include Files

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd" [
<!ENTITY chapter.1 SYSTEM "chapter1.xml">
<!ENTITY chapter.2 SYSTEM "chapter2.xml">
<!ENTITY chapter.3 SYSTEM "chapter3.xml">
<!-- And so forth -->
]>

<html xmlns="http://www.w3.org/1999/xhtml">
  <!-- Use the entities to load in the chapters -->

  &chapter.1;
  &chapter.2;
  &chapter.3;
</html>

```



#### 警告

When using general entities to include other files within a document, the files being included (`chapter1.xml` , `chapter2.xml` , and so on) must not start with a `DOCTYPE` declaration. This is a syntax error because entities are low-level constructs and they are resolved before any parsing happens.

### 7.7.2. Using Parameter Entities to Include Files

Parameter entities can only be used inside an XML context. Including a file in an XML context can be used to ensure that general entities are reusable.

Suppose that there are many chapters in the document, and these chapters were reused in two different books, each book organizing the chapters in a different fashion.

The entities could be listed at the top of each book, but that quickly becomes cumbersome to manage.

Instead, place the general entity definitions inside one file, and use a parameter entity to include that file within the document.

## 範例 7.11. Using Parameter Entities to Include Files

Place the entity definitions in a separate file called `chapters.ent` and containing this text:

```
<!ENTITY chapter.1 SYSTEM "chapter1.xml">
<!ENTITY chapter.2 SYSTEM "chapter2.xml">
<!ENTITY chapter.3 SYSTEM "chapter3.xml">
```

Create a parameter entity to refer to the contents of the file. Then use the parameter entity to load the file into the document, which will then make all the general entities available for use. Then use the general entities as before:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd" [
<!-- Define a parameter entity to load in the chapter general entities -->
<!ENTITY % chapters SYSTEM "chapters.ent">

<!-- Now use the parameter entity to load in this file -->
%chapters;
]>

<html xmlns="http://www.w3.org/1999/xhtml">
  &chapter.1;
  &chapter.2;
  &chapter.3;
</html>
```

### 7.7.3. To Do...

#### 7.7.3.1. Use General Entities to Include Files

1. Create three files, `para1.xml`, `para2.xml`, and `para3.xml`.

Put content like this in each file:

```
<p>This is the first paragraph.</p>
```

2. Edit `example.xml` so that it looks like this:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd" [
<!ENTITY version "1.1">
<!ENTITY para1 SYSTEM "para1.xml">
<!ENTITY para2 SYSTEM "para2.xml">
<!ENTITY para3 SYSTEM "para3.xml">
]>

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>An Example XHTML File</title>
  </head>

  <body>
    <p>The current version of this document is: &version;</p>

    &para1;
    &para2;
```

```
&para3;
</body>
</html>
```

3. Produce `example.html` by normalizing `example.xml` .

```
% xmllint --dropdtd --noent example.xml > example.html
```

4. Load `example.html` into the web browser and confirm that the `paran.xml` files have been included in `example.html` .

### 7.7.3.2. Use Parameter Entities to Include Files



#### 注意

The previous steps must have completed before this step.

1. Edit `example.xml` so that it looks like this:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd" [
<!ENTITY % entities SYSTEM "entities.ent"> %entities;
]>

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>An Example XHTML File</title>
  </head>

  <body>
    <p>The current version of this document is: &version;</p>

    &para1;
    &para2;
    &para3;
  </body>
</html>
```

2. Create a new file called `entities.ent` with this content:

```
<!ENTITY version "1.1">
<!ENTITY para1 SYSTEM "para1.xml">
<!ENTITY para2 SYSTEM "para2.xml">
<!ENTITY para3 SYSTEM "para3.xml">
```

3. Produce `example.html` by normalizing `example.xml` .

```
% xmllint --dropdtd --noent example.xml > example.html
```

4. Load `example.html` into the web browser and confirm that the `paran.xml` files have been included in `example.html` .

## 7.8. Marked Sections

XML provides a mechanism to indicate that particular pieces of the document should be processed in a special way. These are called “marked sections”.

## 範例 7.12. Structure of a Marked Section

```
<![KEYWORD [
  Contents of marked section
]]>
```

As expected of an XML construct, a marked section starts with `<!`.

The first square bracket begins the marked section.

*KEYWORD* describes how this marked section is to be processed by the parser.

The second square bracket indicates the start of the marked section's content.

The marked section is finished by closing the two square brackets, and then returning to the document context from the XML context with `>`.

### 7.8.1. Marked Section Keywords

#### 7.8.1.1. CDATA

These keywords denote the marked sections content model, and allow you to change it from the default.

When an XML parser is processing a document, it keeps track of the “content model”.

The content model describes the content the parser is expecting to see and what it will do with that content.

The **CDATA** content model is one of the most useful.

**CDATA** is for “Character Data”. When the parser is in this content model, it expects to see only characters. In this model the `<` and `&` symbols lose their special status, and will be treated as ordinary characters.



#### 注意

When using **CDATA** in examples of text marked up in XML, remember that the content of **CDATA** is not validated. The included text must be checked with other means. For example, the content could be written in another document, validated, and then pasted into the **CDATA** section.

## 範例 7.13. Using a **CDATA** Marked Section

```
<para>Here is an example of how to include some text that contains
many <literal>&lt;</literal> and <literal>&amp;</literal>
symbols. The sample text is a fragment of
<acronym>XHTML</acronym>. The surrounding text (<para> and
<programlisting>) are from DocBook.</para>

<programlisting> <![CDATA[<p>This is a sample that shows some of the
elements within <acronym>XHTML</acronym>. Since the angle
```

```
brackets are used so many times, it is simpler to say the whole
example is a CDATA marked section than to use the entity names for
the left and right angle brackets throughout.</p>
```

```
<ul>
  <li>This is a listitem</li>
  <li>This is a second listitem</li>
  <li>This is a third listitem</li>
</ul>

<p>This is the end of the example.</p>]]></programlisting>
```

### 7.8.1.2. INCLUDE and IGNORE

When the keyword is **INCLUDE**, then the contents of the marked section will be processed. When the keyword is **IGNORE**, the marked section is ignored and will not be processed. It will not appear in the output.

#### 範例 7.14. Using **INCLUDE** and **IGNORE** in Marked Sections

```
<![INCLUDE[
  This text will be processed and included.
]]>

<![IGNORE[
  This text will not be processed or included.
]]>
```

By itself, this is not too useful. Text to be removed from the document could be cut out, or wrapped in comments.

It becomes more useful when controlled by [parameter entities](#), yet this usage is limited to entity files.

For example, suppose that documentation was produced in a hard-copy version and an electronic version. Some extra text is desired in the electronic version content that was not to appear in the hard-copy.

Create an entity file that defines general entities to include each chapter and guard these definitions with a parameter entity that can be set to either **INCLUDE** or **IGNORE** to control whether the entity is defined. After these conditional general entity definitions, place one more definition for each general entity to set them to an empty value. This technique makes use of the fact that entity definitions cannot be overridden but the first definition always takes effect. So the inclusion of the chapter is controlled with the corresponding parameter entity. Set to **INCLUDE**, the first general entity definition will be read and the second one will be ignored. Set to **IGNORE**, the first definition will be ignored and the second one will take effect.

#### 範例 7.15. Using a Parameter Entity to Control a Marked Section

```
<!ENTITY % electronic.copy "INCLUDE">

<![%electronic.copy;[
  <!ENTITY chap.preface SYSTEM "preface.xml">
]]>

<!ENTITY chap.preface "">
```

When producing the hard-copy version, change the parameter entity's definition to:

```
<!ENTITY % electronic.copy "IGNORE">
```

### 7.8.2. To Do...

1. Modify `entities.ent` to contain the following:

```
<!ENTITY version "1.1">
<!ENTITY % conditional.text "IGNORE">

<![%conditional.text;[
<!ENTITY para1 SYSTEM "para1.xml">
]]>

<!ENTITY para1 "">

<!ENTITY para2 SYSTEM "para2.xml">
<!ENTITY para3 SYSTEM "para3.xml">
```

2. Normalize `example.xml` and notice that the conditional text is not present in the output document. Set the parameter entity guard to **INCLUDE** and regenerate the normalized document and the text will appear again. This method makes sense if there are more conditional chunks depending on the same condition. For example, to control generating printed or online text.

## 7.9. Conclusion

That is the conclusion of this XML primer. For reasons of space and complexity, several things have not been covered in depth (or at all). However, the previous sections cover enough XML to introduce the organization of the FDP documentation.

# 章 8. XHTML Markup

## 8.1. Introduction

This chapter describes usage of the XHTML markup language used for the FreeBSD web site.

XHTML is the XML version of the HyperText Markup Language, the markup language of choice on the World Wide Web. More information can be found at <http://www.w3.org/> .

XHTML is used to mark up pages on the FreeBSD web site. It is usually not used to mark up other documentation, since DocBook offers a far richer set of elements from which to choose. Consequently, XHTML pages will normally only be encountered when writing for the web site.

HTML has gone through a number of versions. The XML-compliant version described here is called XHTML. The latest widespread version is XHTML 1.0, available in both strict and transitional variants.

The XHTML DTDs are available from the Ports Collection in [textproc/xhtmll](#). They are automatically installed by the [textproc/docproj](#) port.



### 注意

This is not an exhaustive list of elements, since that would just repeat the documentation for XHTML. The aim is to list those elements most commonly used. Please post questions about elements or uses not covered here to the [FreeBSD documentation project mailing list](#).



### Inline Versus Block

In the remainder of this document, when describing elements, inline means that the element can occur within a block element, and does not cause a line break. A block element, by comparison, will cause a line break (and other processing) when it is encountered.

## 8.2. Formal Public Identifier (FPI)

There are a number of XHTML FPIs, depending upon the version, or level of XHTML to which a document conforms. Most XHTML documents on the FreeBSD web site comply with the transitional version of XHTML 1.0.

```
PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
```

## 8.3. Sectional Elements

An XHTML document is normally split into two sections. The first section, called the head, contains meta-information about the document, such as its title, the name of the author, the parent document, and so on. The second section, the body, contains content that will be displayed to the user.

These sections are indicated with **head** and **body** elements respectively. These elements are contained within the top-level **html** element.

### 範例 8.1. Normal XHTML Document Structure

```
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>The Document's Title </title>
  </head>

  <body>

    ...

  </body>
</html>
```

## 8.4. Block Elements

### 8.4.1. Headings

XHTML has tags to denote headings in the document at up to six different levels.

The largest and most prominent heading is **h1**, then **h2**, continuing down to **h6**.

The element's content is the text of the heading.

### 範例 8.2. h1, h2, and Other Header Tags

Usage:

```
<h1>First section</h1>

<!-- Document introduction goes here -->

<h2>This is the heading for the first section</h2>

<!-- Content for the first section goes here -->

<h3>This is the heading for the first sub-section</h3>

<!-- Content for the first sub-section goes here -->

<h2>This is the heading for the second section</h2>

<!-- Content for the second section goes here -->
```

Generally, an XHTML page should have one first level heading (**h1**). This can contain many second level headings (**h2**), which can in turn contain many third level headings. Do not leave gaps in the numbering.

### 8.4.2. Paragraphs

XHTML supports a single paragraph element, **p**.



### 範例 8.3. `p` Example

Usage:

```
<p>This is a paragraph. It can contain just about any  
other element.</p>
```

### 8.4.3. Block Quotations

A block quotation is an extended quotation from another document that will appear in a separate paragraph.

### 範例 8.4. `blockquote` Example

Usage:

```
<p>A small excerpt from the US Constitution:</p>  
<blockquote> We the People of the United States, in Order to form  
a more perfect Union, establish Justice, insure domestic  
Tranquility, provide for the common defence, promote the general  
Welfare, and secure the Blessings of Liberty to ourselves and our  
Posterity, do ordain and establish this Constitution for the  
United States of America.</blockquote>
```

### 8.4.4. Lists

XHTML can present the user with three types of lists: ordered, unordered, and definition.

Entries in an ordered list will be numbered, while entries in an unordered list will be preceded by bullet points. Definition lists have two sections for each entry. The first section is the term being defined, and the second section is the definition.

Ordered lists are indicated by the `ol` element, unordered lists by the `ul` element, and definition lists by the `dl` element.

Ordered and unordered lists contain listitems, indicated by the `li` element. A listitem can contain textual content, or it may be further wrapped in one or more `p` elements.

Definition lists contain definition terms (`dt`) and definition descriptions (`dd`). A definition term can only contain inline elements. A definition description can contain other block elements.

### 範例 8.5. `ul` and `ol` Example

Usage:

```
<p>An unordered list. Listitems will probably be  
preceded by bullets.</p>  
<ul>  
<li>First item</li>
```

```

<li>Second item</li>

<li>Third item</li>
</ul>

<p>An ordered list, with list items consisting of multiple
  paragraphs. Each item (note: not each paragraph) will be
  numbered.</p>

<ol>
  <li><p>This is the first item. It only has one paragraph.</p></li>

  <li><p>This is the first paragraph of the second item.</p>

    <p>This is the second paragraph of the second item.</p></li>

  <li><p>This is the first and only paragraph of the third
    item.</p></li>
</ol>

```

## 範例 8.6. Definition Lists with `dl`

Usage:

```

<dl>
  <dt>Term 1</dt>

  <dd><p>Paragraph 1 of definition 1.</p>

    <p>Paragraph 2 of definition 1.</p></dd>

  <dt>Term 2</dt>

  <dd><p>Paragraph 1 of definition 2.</p></dd>

  <dt>Term 3</dt>

  <dd><p>Paragraph 1 of definition 3.</p></dd>
</dl>

```

### 8.4.5. Pre-formatted Text

Pre-formatted text is shown to the user exactly as it is in the file. Text is shown in a fixed font. Multiple spaces and line breaks are shown exactly as they are in the file.

Wrap pre-formatted text in the `pre` element.

## 範例 8.7. `pre` Example

For example, the `pre` tags could be used to mark up an email message:

```
<pre> From: nik@FreeBSD.org
      To: freebsd-doc@FreeBSD.org
      Subject: New documentation available

      There is a new copy of my primer for contributors to the FreeBSD
      Documentation Project available at

      &lt;URL:http://people.FreeBSD.org/~nik/primer/index.html&gt;

      Comments appreciated.

N</pre>
```

Keep in mind that `<` and `&` still are recognized as special characters in pre-formatted text. This is why the example shown had to use `&lt;` instead of `<`. For consistency, `&gt;` was used in place of `>`, too. Watch out for the special characters that may appear in text copied from a plain-text source, like an email message or program code.

### 8.4.6. Tables

Mark up tabular information using the `table` element. A table consists of one or more table rows (`tr`), each containing one or more cells of table data (`td`). Each cell can contain other block elements, such as paragraphs or lists. It can also contain another table (this nesting can repeat indefinitely). If the cell only contains one paragraph then the `p` element is not needed.

#### 範例 8.8. Simple Use of `table`

Usage:

```
<p>This is a simple 2x2 table.</p>

<table>
  <tr>
    <td>Top left cell</td>

    <td>Top right cell</td>
  </tr>

  <tr>
    <td>Bottom left cell</td>

    <td>Bottom right cell</td>
  </tr>
</table>
```

A cell can span multiple rows and columns by adding the `rowspan` or `colspan` attributes with values for the number of rows or columns to be spanned.

#### 範例 8.9. Using `rowspan`

Usage:

```
<p>One tall thin cell on the left, two short cells next to it on the right.</p>
```

```
<table>
  <tr>
    <td rowspan="2"> Long and thin</td>
  </tr>

  <tr>
    <td>Top cell</td>

    <td>Bottom cell</td>
  </tr>
</table>
```

### 範例 8.10. Using **colspan**

Usage:

```
<p>One long cell on top, two short cells below it.</p>
```

```
<table>
  <tr>
    <td colspan="2"> Top cell</td>
  </tr>

  <tr>
    <td>Bottom left cell</td>

    <td>Bottom right cell</td>
  </tr>
</table>
```

### 範例 8.11. Using **rowspan** and **colspan** Together

Usage:

```
<p>On a 3x3 grid, the top left block is a 2x2 set of cells merged into one. The other cells are normal.</p>
```

```
<table>
  <tr>
    <td colspan="2" rowspan="2"> Top left large cell</td>

    <td>Top right cell</td>
  </tr>

  <tr>
    <!-- Because the large cell on the left merges into
```

```

        this row, the first <td> will occur on its
        right -->

        <td>Middle right cell</td>
    </tr>

    <tr>
        <td>Bottom left cell</td>

        <td>Bottom middle cell</td>

        <td>Bottom right cell</td>
    </tr>
</table>

```

## 8.5. In-line Elements

### 8.5.1. Emphasizing Information

Two levels of emphasis are available in XHTML, `em` and `strong`. `em` is for a normal level of emphasis and `strong` indicates stronger emphasis.

`em` is typically rendered in italic and `strong` is rendered in bold. This is not always the case, and should not be relied upon. According to best practices, web pages only hold structural and semantical information, and stylesheets are later applied to them. Think of semantics, not formatting, when using these tags.

#### 範例 8.12. `em` and `strong` Example

Usage:

```

<p><em>This</em> has been emphasized, while
  <strong>this</strong> has been strongly emphasized.</p>

```

### 8.5.2. Indicating Fixed-Pitch Text

Content that should be rendered in a fixed pitch (typewriter) typeface is tagged with `tt` (for “teletype”).

#### 範例 8.13. `tt` Example

Usage:

```

<p>Many system settings are stored in
  <tt>/etc</tt>.</p>

```

### 8.5.3. Links



#### 注意

Links are also inline elements.

#### 8.5.3.1. Linking to Other Documents on the Web

A link points to the URL of a document on the web. The link is indicated with `a`, and the `href` attribute contains the URL of the target document. The content of the element becomes the link, indicated to the user by showing it in a different color or with an underline.

##### 範例 8.14. Using `<a href="...">`

Usage:

```
<p>More information is available at the  
<a href="http://www.&os;.org/"> &os; web site</a>.</p>
```

This link always takes the user to the top of the linked document.

#### 8.5.3.2. Linking to Specific Parts of Documents

To link to a specific point within a document, that document must include an anchor at the desired point. Anchors are included by setting the `id` attribute of an element to a name. This example creates an anchor by setting the `id` attribute of a `p` element.

##### 範例 8.15. Creating an Anchor

Usage:

```
<p id="samplepara"> This paragraph can be referenced  
in other links with the name <tt>samplepara</tt>.</p>
```

Links to anchors are similar to plain links, but include a `#` symbol and the anchor's ID at the end of the URL.

##### 範例 8.16. Linking to a Named Part of a Different Document

The `samplepara` example is part of a document called `foo.html`. A link to that specific paragraph in the document is constructed in this example.

```
<p>More information can be found in the  
<a href="foo.html#samplepara"> sample paragraph</a> of
```

```
<tt>foo.html</tt>.</p>
```

To link to a named anchor within the same document, omit the document's URL, and just use the **#** symbol followed by the name of the anchor.

### 範例 8.17. Linking to a Named Part of the Same Document

The `samplepara` example resides in this document. To link to it:

```
<p>More information can be found in the  
<a href="#samplepara"> sample paragraph</a> of this  
document.</p>
```





# 章 9. DocBook Markup

## 9.1. Introduction

This chapter is an introduction to DocBook as it is used for FreeBSD documentation. DocBook is a large and complex markup system, but the subset described here covers the parts that are most widely used for FreeBSD documentation. While a moderate subset is covered, it is impossible to anticipate every situation. Please post questions that this document does not answer to the [FreeBSD documentation project mailing list](#).

DocBook was originally developed by HaL Computer Systems and O'Reilly & Associates to be a Document Type Definition (DTD) for writing technical documentation<sup>1</sup>. Since 1998 it is maintained by the [DocBook Technical Committee](#). As such, and unlike LinuxDoc and XHTML, DocBook is very heavily oriented towards markup that describes what something is, rather than describing how it should be presented.

The DocBook DTD is available from the Ports Collection in the [textproc/docbook-xml](#) port. It is automatically installed as part of the [textproc/docproj](#) port.



### Formal Versus Informal

Some elements may exist in two forms, formal and informal. Typically, the formal version of the element will consist of a title followed by the informal version of the element. The informal version will not have a title.



### Inline Versus Block

In the remainder of this document, when describing elements, inline means that the element can occur within a block element, and does not cause a line break. A block element, by comparison, will cause a line break (and other processing) when it is encountered.

## 9.2. FreeBSD Extensions

The FreeBSD Documentation Project has extended the DocBook DTD with additional elements and entities. These additions serve to make some of the markup easier or more precise.

Throughout the rest of this document, the term “DocBook” is used to mean the FreeBSD-extended DocBook DTD.



### 注意

Most of these extensions are not unique to FreeBSD, it was just felt that they were useful enhancements for this particular project. Should anyone from any of the other \*nix camps (NetBSD, OpenBSD, Linux, ...) be interested in collaborating on a standard DocBook extension set, please contact Documentation Engineering Team <[doceng@FreeBSD.org](mailto:doceng@FreeBSD.org)>.

<sup>1</sup>A short history can be found under <http://www.oasis-open.org/docbook/intro.shtml#d0e41>.

## 9.2.1. FreeBSD Elements

The additional FreeBSD elements are not (currently) in the Ports Collection. They are stored in the FreeBSD Subversion tree, as [head/share/xml/freebsd.dtd](http://head/share/xml/freebsd.dtd).

FreeBSD-specific elements used in the examples below are clearly marked.

## 9.2.2. FreeBSD Entities

This table shows some of the most useful entities available in the FDP. For a complete list, see the \*.ent files in `doc/share/xml`.

FreeBSD Name Entities		
<code>&amp;os;</code>	FreeBSD	
<code>&amp;os.stable;</code>	FreeBSD-STABLE	
<code>&amp;os.current;</code>	FreeBSD-CURRENT	
Manual Page Entities		
<code>&amp;man.ls.1;</code>	<a href="#">ls(1)</a>	Usage: <code>&amp;man.ls.1;</code> is the manual page for <code>&lt;command&gt;ls&lt;/command&gt;</code> .
<code>&amp;man.cp.1;</code>	<a href="#">cp(1)</a>	Usage: The manual page for <code>&lt;command&gt;cp&lt;/command&gt;</code> is <code>&amp;man.cp.1;</code> .
<code>&amp;man.command.sectionnumber;</code>	link to <b>command</b> manual page in section <b>sectionnumber</b>	Entities are defined for all the <a href="#">FreeBSD manual pages</a> .
FreeBSD Mailing List Entities		
<code>&amp;a.doc;</code>	<a href="#">FreeBSD documentation project mailing list</a>	Usage: A link to the <code>&amp;a.doc;</code> .
<code>&amp;a.questions;</code>	<a href="#">FreeBSD general questions mailing list</a>	Usage: A link to the <code>&amp;a.questions;</code> .
<code>&amp;a.listname;</code>	link to <b>listname</b>	Entities are defined for all the <a href="#">FreeBSD mailing lists</a> .
FreeBSD Document Link Entities		
<code>&amp;url.books.handbook;</code>	<a href="http://www.FreeBSD.org/doc/en_US.IS08859-1/books/handbook">http://www.FreeBSD.org/doc/en_US.IS08859-1/books/handbook</a>	Usage: A link to the <code>&lt;link xlink:href="&amp;url.books.handbook;/advanced-networking.html"&gt;Advanced Networking&lt;/link&gt;</code> chapter of the Handbook.
<code>&amp;url.books. bookname ;</code>	relative path to <b>bookname</b>	Entities are defined for all the <a href="#">FreeBSD books</a> .
<code>&amp;url.articles.committers-guide;</code>	<a href="http://www.FreeBSD.org/doc/en_US.IS08859-1/">http://www.FreeBSD.org/doc/en_US.IS08859-1/</a>	Usage: A link to the <code>&lt;link xlink:href="&amp;url.articles.committers-</code>

	articles/committers-guide	guide;">Committer's Guide</link> article.
<code>&amp;url.articles. <i>articlename</i></code>	relative path to <b><i>articlename</i></b>	Entities are defined for all the <a href="#">FreeBSD articles</a> .
Other Operating System Name Entities		
<code>&amp;linux;</code>	Linux®	The Linux® operating system.
<code>&amp;unix;</code>	UNIX®	The UNIX® operating system.
<code>&amp;windows;</code>	Windows®	The Windows® operating system.
Miscellaneous Entities		
<code>&amp;prompt.root;</code>	#	The <b>root</b> user prompt.
<code>&amp;prompt.user;</code>	%	A prompt for an unprivileged user.
<code>&amp;postscript;</code>	PostScript®	The PostScript® programming language.
<code>&amp;tex;</code>	TeX	The TeX typesetting language.
<code>&amp;xorg;</code>	Xorg	The Xorg open source X Window System.

### 9.3. Formal Public Identifier (FPI)

In compliance with the DocBook guidelines for writing FPIs for DocBook customizations, the FPI for the FreeBSD extended DocBook DTD is:

```
PUBLIC "-//FreeBSD//DTD DocBook V4.2-Based Extension//EN"
```

### 9.4. Document Structure

DocBook allows structuring documentation in several ways. The FreeBSD Documentation Project uses two primary types of DocBook document: the book and the article.

Books are organized into **chapter**s. This is a mandatory requirement. There may be **part**s between the book and the chapter to provide another layer of organization. For example, the Handbook is arranged in this way.

A chapter may (or may not) contain one or more sections. These are indicated with the **sect1** element. If a section contains another section then use the **sect2** element, and so on, up to **sect5**.

Chapters and sections contain the remainder of the content.

An article is simpler than a book, and does not use chapters. Instead, the content of an article is organized into one or more sections, using the same **sect1** (and **sect2** and so on) elements that are used in books.

The nature of the document being written should be used to determine whether it is best marked up as a book or an article. Articles are well suited to information that does not need to be broken down into several chapters, and that is, relatively speaking, quite short, at up to 20-25 pages of content. Books are best suited to information that can be broken up into several chapters, possibly with appendices and similar content as well.

The [FreeBSD tutorials](#) are all marked up as articles, while this document, the [FAQ](#), and the [Handbook](#) are all marked up as books, for example.

### 9.4.1. Starting a Book

The content of a book is contained within the **book** element. As well as containing structural markup, this element can contain elements that include additional information about the book. This is either meta-information, used for reference purposes, or additional content used to produce a title page.

This additional information is contained within **info**.

#### 範例 9.1. Boilerplate **book** with **info**

```
<book>
  <info>
    <title>Your Title Here </title>

    <author>
      <personname>
        <firstname>Your first name </firstname>
        <surname>Your surname </surname>
      </personname>

      <affiliation>
    <address>
      <email>Your email address </email>
    </address>
      </affiliation>
    </author>

    <copyright>
      <year>1998</year>
      <holder role="mailto: your email address ">Your name</holder>
    </copyright>

    <releaseinfo> $FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 ǵ
    2016-10-12 02:42:33Z rcyu $</releaseinfo>

    <abstract>
      <para>Include an abstract of the book's contents here. </para>
    </abstract>
  </info>

  ...
</book>
```

### 9.4.2. Starting an Article

The content of the article is contained within the **article** element. As well as containing structural markup, this element can contain elements that include additional information about the article. This is either meta-information, used for reference purposes, or additional content used to produce a title page.

This additional information is contained within **info**.

範例 9.2. Boilerplate **article** with **info**

```

<article>
  <info>
    <title>Your title here</title>

    <author>
      <personname>
        <firstname>Your first name</firstname>
        <surname>Your surname</surname>
      </personname>

      <affiliation>
      <address>
        <email>Your email address</email></address>
      </address>
      </affiliation>
    </author>

    <copyright>
      <year>1998</year>
      <holder role="mailto: your email address ">Your name</holder>
    </copyright>

    <releaseinfo> $FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 ǔ
    2016-10-12 02:42:33Z rcyu $</releaseinfo>

    <abstract>
      <para>Include an abstract of the article's contents here. </
    para>
    </abstract>
  </info>

  ...
</article>

```

## 9.4.3. Indicating Chapters

Use **chapter** to mark up your chapters. Each chapter has a mandatory **title**. Articles do not contain chapters, they are reserved for books.

## 範例 9.3. A Simple Chapter

```

<chapter>
  <title>The Chapter's Title</title>

  ...
</chapter>

```

A chapter cannot be empty; it must contain elements in addition to `title`. If you need to include an empty chapter then just use an empty paragraph.

### 範例 9.4. Empty Chapters

```
<chapter>
  <title>This is An Empty Chapter</title>

  <para></para>
</chapter>
```

#### 9.4.4. Sections Below Chapters

In books, chapters may (but do not need to) be broken up into sections, subsections, and so on. In articles, sections are the main structural element, and each article must contain at least one section. Use the `sect $n$`  element. The  $n$  indicates the section number, which identifies the section level.

The first `sect $n$`  is `sect1`. You can have one or more of these in a chapter. They can contain one or more `sect2` elements, and so on, down to `sect5`.

### 範例 9.5. Sections in Chapters

```
<chapter>
  <title>A Sample Chapter</title>

  <para>Some text in the chapter.</para>

  <sect1>
    <title>First Section</title>

    ...
  </sect1>

  <sect1>
    <title>Second Section</title>

    <sect2>
      <title>First Sub-Section</title>

      <sect3>
        <title>First Sub-Sub-Section</title>

        ...
      </sect3>
    </sect2>

    <sect2>
      <title>Second Sub-Section (1.2.2)</title>

      ...
    </sect2>
  </sect1>
```

```
</chapter>
```



### 注意

Section numbers are automatically generated and prepended to titles when the document is rendered to an output format. The generated section numbers and titles from the example above will be:

- 1.1. First Section
- 1.2. Second Section
- 1.2.1. First Sub-Section
- 1.2.1.1. First Sub-Sub-Section
- 1.2.2. Second Sub-Section

## 9.4.5. Subdividing Using part Elements

`parts` introduce another level of organization between `book` and `chapter` with one or more `parts`. This cannot be done in an `article`.

```
<part>
  <title>Introduction</title>

  <chapter>
    <title>Overview</title>

    ...
  </chapter>

  <chapter>
    <title>What is FreeBSD?</title>

    ...
  </chapter>

  <chapter>
    <title>History</title>

    ...
  </chapter>
</part>
```

## 9.5. Block Elements

### 9.5.1. Paragraphs

DocBook supports three types of paragraphs: `formalpara`, `para`, and `simpara`.

Almost all paragraphs in FreeBSD documentation use `para`. `formalpara` includes a `title` element, and `simpara` disallows some elements from within `para`. Stick with `para`.

### 範例 9.6. `para` Example

Usage:

```
<para>This is a paragraph. It can contain just about any  
other element.</para>
```

Appearance:

This is a paragraph. It can contain just about any other element.

## 9.5.2. Block Quotations

A block quotation is an extended quotation from another document that should not appear within the current paragraph. These are rarely needed.

Blockquotes can optionally contain a title and an attribution (or they can be left untitled and unattributed).

### 範例 9.7. `blockquote` Example

Usage:

```
<para>A small excerpt from the US Constitution:</para>  
  
<blockquote>  
  <title>Preamble to the Constitution of the United States</title>  
  
  <attribution> Copied from a web site somewhere</attribution>  
  
  <para>We the People of the United States, in Order to form a more  
  perfect Union, establish Justice, insure domestic Tranquility,  
  provide for the common defence, promote the general Welfare, and  
  secure the Blessings of Liberty to ourselves and our Posterity, do  
  ordain and establish this Constitution for the United States of  
  America.</para>  
</blockquote>
```

Appearance:

A small excerpt from the US Constitution:

Preamble to the Constitution of the United States

We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.

—Copied from a web site somewhere

## 9.5.3. Tips, Notes, Warnings, Cautions, and Important Information

Extra information may need to be separated from the main body of the text. Typically this is “meta” information of which the user should be aware.



Several types of admonitions are available: **tip**, **note**, **warning**, **caution**, and **important**.

Which admonition to choose depends on the situation. The DocBook documentation suggests:

- Note is for information that should be heeded by all readers.
- Important is a variation on Note.
- Caution is for information regarding possible data loss or software damage.
- Warning is for information regarding possible hardware damage or injury to life or limb.

### 範例 9.8. **tip** and **important** Example

Usage:

```
<tip>
  <para>&os; may reduce stress.</para>
</tip>

<important>
  <para>Please use admonitions sparingly. Too many admonitions
    are visually jarring and can have the opposite of the
    intended effect.</para>
</important>
```

Appearance:



提示

FreeBSD may reduce stress.



重要

Please use admonitions sparingly. Too many admonitions are visually jarring and can have the opposite of the intended effect.

#### 9.5.4. 舉例

Examples can be shown with **example**.

### 範例 9.9. **example** Source

Usage:

```
<example>
```

```
<para>Empty files can be created easily:</para>

<screen>&prompt.user; <userinput> touch file1 file2 file3</userinput> </
screen>
</example>
```

Appearance:

### 範例 9.10. Rendered **example**

Empty files can be created easily:

```
% touch file1 file2 file3
```

## 9.5.5. Lists and Procedures

Information often needs to be presented as lists, or as a number of steps that must be carried out in order to accomplish a particular goal.

To do this, use `itemizedlist`, `orderedlist`, `variablelist`, or `procedure`. There are other types of list elements in DocBook, but we will not cover them here.

`itemizedlist` and `orderedlist` are similar to their counterparts in HTML, `ul` and `ol`. Each one consists of one or more `listitem` elements, and each `listitem` contains one or more block elements. The `listitem` elements are analogous to HTML's `li` tags. However, unlike HTML, they are required.

### 範例 9.11. `itemizedlist` and `orderedlist` Example

Usage:

```
<itemizedlist>
  <listitem>
    <para>This is the first itemized item.</para>
  </listitem>

  <listitem>
    <para>This is the second itemized item.</para>
  </listitem>
</itemizedlist>

<orderedlist>
  <listitem>
    <para>This is the first ordered item.</para>
  </listitem>

  <listitem>
    <para>This is the second ordered item.</para>
  </listitem>
</orderedlist>
```

Appearance:

- This is the first itemized item.
  - This is the second itemized item.
1. This is the first ordered item.
  2. This is the second ordered item.

An alternate and often useful way of presenting information is the **variablelist**. These are lists where each entry has a term and a description. They are well suited for many types of descriptions, and present information in a form that is often easier for the reader than sections and subsections.

A **variablelist** has a **title**, and then pairs of **term** and **listitem** entries.

### 範例 9.12. **variablelist** Example

Usage:

```
<variablelist>
  <varlistentry>
    <term>Parallel</term>

    <listitem>
      <para>In parallel communications, groups of bits arrive
at the same time over multiple communications
channels.</para>
    </listitem>
  </varlistentry>

  <varlistentry>
    <term>Serial</term>

    <listitem>
      <para>In serial communications, bits arrive one at a
time over a single communications
channel.</para>
    </listitem>
  </varlistentry>
</variablelist>
```

Appearance:

Parallel

In parallel communications, groups of bits arrive at the same time over multiple communications channels.

Serial

In serial communications, bits arrive one at a time over a single communications channel.

A **procedure** shows a series of **steps**, which may in turn consist of more **steps** or **substeps**. Each **step** contains block elements and may include an optional title.

Sometimes, steps are not sequential, but present a choice: do this or do that, but not both. For these alternative choices, use **stepalternatives** .

### 範例 9.13. **procedure** Example

Usage:

```
<procedure>
  <step>
    <para>Do this.</para>
  </step>

  <step>
    <para>Then do this.</para>
  </step>

  <step>
    <para>And now do this.</para>
  </step>

  <step>
    <para>Finally, do one of these.</para>

    <stepalternatives>
      <step>
        <para>Go left.</para>
      </step>

      <step>
        <para>Go right.</para>
      </step>
    </stepalternatives>
  </step>
</procedure>
```

Appearance:

1. Do this.
2. Then do this.
3. And now do this.
4. Finally, do one of these:
  - Go left.
  - Go right.

## 9.5.6. Showing File Samples

Fragments of a file (or perhaps a complete file) are shown by wrapping them in the **programlisting** element.

White space and line breaks within `programlisting` are significant. In particular, this means that the opening tag should appear on the same line as the first line of the output, and the closing tag should appear on the same line as the last line of the output, otherwise spurious blank lines may be included.

### 範例 9.14. `programlisting` Example

Usage:

```
<para>When finished, the program will look like
  this:</para>

<programlisting> #include &lt;stdio.h&gt;

int
main(void)
{
    printf("hello, world\n");
}</programlisting>
```

Notice how the angle brackets in the `#include` line need to be referenced by their entities instead of being included literally.

Appearance:

When finished, the program will look like this:

```
#include <stdio.h>

int
main(void)
{
    printf("hello, world\n");
}
```

### 9.5.7. Callouts

A callout is a visual marker for referring to a piece of text or specific position within an example.

Callouts are marked with the `CO` element. Each element must have a unique `id` assigned to it. After the example, include a `calloutlist` that describes each callout.

### 範例 9.15. `co` and `calloutlist` Example

```
<para>When finished, the program will look like
  this:</para>

<programlisting> #include &lt;stdio.h&gt; <co xml:id="co-ex-include"/>

int <co xml:id="co-ex-return"/>
main(void)
{
    printf("hello, world\n"); <co xml:id="co-ex-printf"/>
}</programlisting>
```

```

<calloutlist>
  <callout arearefs="co-ex-include">
    <para>Includes the standard IO header file.</para>
  </callout>

  <callout arearefs="co-ex-return">
    <para>Specifies that <function>main()</function> returns an
      int.</para>
  </callout>

  <callout arearefs="co-ex-printf">
    <para>The <function>printf()</function> call that writes
      <literal>hello, world</literal> to standard output.</para>
  </callout>
</calloutlist>

```

Appearance:

When finished, the program will look like this:

```

#include <stdio.h> ❶

int ❷
main(void)
{
    printf("hello, world\n"); ❸
}

```

- ❶ Includes the standard IO header file.
- ❷ Specifies that `main()` returns an int.
- ❸ The `printf()` call that writes `hello, world` to standard output.

### 9.5.8. Tables

Unlike HTML, DocBook does not need tables for layout purposes, as the stylesheet handles those issues. Instead, just use tables for marking up tabular data.

In general terms (and see the DocBook documentation for more detail) a table (which can be either formal or informal) consists of a **table** element. This contains at least one **tgroup** element, which specifies (as an attribute) the number of columns in this table group. Within the tablegroup there is one **thead** element, which contains elements for the table headings (column headings), and one **tbody** which contains the body of the table.

Both **tgroup** and **thead** contain **row** elements, which in turn contain **entry** elements. Each **entry** element specifies one cell in the table.

#### 範例 9.16. `informaltable` Example

Usage:

```

<informaltable pgwide="1">
  <tgroup cols="2">
    <thead>
      <row>

```

```

    <entry>This is Column Head 1</entry>
    <entry>This is Column Head 2</entry>
  </row>
</thead>

  <tbody>
    <row>
<entry>Row 1, column 1</entry>
<entry>Row 1, column 2</entry>
    </row>

    <row>
<entry>Row 2, column 1</entry>
<entry>Row 2, column 2</entry>
    </row>
  </tbody>
</tgroup>
</informaltable>

```

Appearance:

This is Column Head 1	This is Column Head 2
Row 1, column 1	Row 1, column 2
Row 2, column 1	Row 2, column 2

Always use the `pgwide` attribute with a value of `1` with the `informaltable` element. A bug in Internet Explorer can cause the table to render incorrectly if this is omitted.

Table borders can be suppressed by setting the `frame` attribute to `none` in the `informaltable` element. For example, `informaltable frame="none"` .

### 範例 9.17. Table with `frame="none"` Example

Appearance:

This is Column Head 1	This is Column Head 2
Row 1, column 1	Row 1, column 2
Row 2, column 1	Row 2, column 2

## 9.5.9. Examples for the User to Follow

Examples for the user to follow are often necessary. Typically, these will consist of dialogs with the computer; the user types in a command, the user gets a response back, the user types another command, and so on.

A number of distinct elements and entities come into play here.

## screen

Everything the user sees in this example will be on the computer screen, so the next element is `screen`.

Within `screen`, white space is significant.

## `prompt`, `&prompt.root;` and `&prompt.user;`

Some of the things the user will be seeing on the screen are prompts from the computer (either from the operating system, command shell, or application). These should be marked up using `prompt`.

As a special case, the two shell prompts for the normal user and the root user have been provided as entities. To indicate the user is at a shell prompt, use one of `&prompt.root;` and `&prompt.user;` as necessary. They do not need to be inside `prompt`.



### 注意

`&prompt.root;` and `&prompt.user;` are FreeBSD extensions to DocBook, and are not part of the original DTD.

## userinput

When displaying text that the user should type in, wrap it in `userinput` tags. It will be displayed differently than system output text.

### 範例 9.18. `screen`, `prompt`, and `userinput` Example

Usage:

```

<screen>&prompt.user; <userinput> ls -l</userinput>
foo1
foo2
foo3
&prompt.user; <userinput> ls -l | grep foo2</userinput>
foo2
&prompt.user; <userinput> su</userinput>
<prompt>Password: </prompt>
&prompt.root; <userinput> cat foo2</userinput>
This is the file called 'foo2'</screen>

```

Appearance:

```

% ls -l
foo1
foo2
foo3
% ls -l | grep foo2
foo2
% su
Password:
# cat foo2
This is the file called 'foo2'

```





## 注意

Even though we are displaying the contents of the file `foo2`, it is not marked up as `programlisting`. Reserve `programlisting` for showing fragments of files outside the context of user actions.

## 9.6. In-line Elements

### 9.6.1. Emphasizing Information

To emphasize a particular word or phrase, use `emphasis`. This may be presented as italic, or bold, or might be spoken differently with a text-to-speech system.

There is no way to change the presentation of the emphasis within the document, no equivalent of HTML's `b` and `i`. If the information being presented is important, then consider presenting it in `important` rather than `emphasis`.

#### 範例 9.19. `emphasis` Example

Usage:

```
<para>&os; is without doubt <emphasis>the</emphasis>
premiere &unix;-like operating system for the Intel
architecture.</para>
```

Appearance:

FreeBSD is without doubt the premiere UNIX®-like operating system for the Intel architecture.

### 9.6.2. Acronyms

Many computer terms are acronyms, words formed from the first letter of each word in a phrase. Acronyms are marked up into `acronym` elements. It is helpful to the reader when an acronym is defined on the first use, as shown in the example below.

#### 範例 9.20. `acronym` Example

Usage:

```
<para>Request For Comments ( <acronym>RFC</acronym> ) 1149
defined the use of avian carriers for transmission of
Internet Protocol ( <acronym>IP</acronym> ) data. The
quantity of <acronym>IP</acronym> data currently
transmitted in that manner is unknown.</para>
```

Appearance:

Request For Comments (RFC) 1149 defined the use of avian carriers for transmission of Internet Protocol (IP) data. The quantity of IP data currently transmitted in that manner is unknown.

### 9.6.3. Quotations

To quote text from another document or source, or to denote a phrase that is used figuratively, use `quote`. Most of the markup tags available for normal text are also available from within a `quote`.

#### 範例 9.21. `quote` Example

Usage:

```
<para>However, make sure that the search does not go beyond the
  <quote>boundary between local and public administration</quote> ,
  as <acronym>RFC</acronym> 1535 calls it.</para>
```

Appearance:

However, make sure that the search does not go beyond the “boundary between local and public administration”, as RFC 1535 calls it.

### 9.6.4. Keys, Mouse Buttons, and Combinations

To refer to a specific key on the keyboard, use `keycap`. To refer to a mouse button, use `mousebutton`. And to refer to combinations of key presses or mouse clicks, wrap them all in `keycombo`.

`keycombo` has an attribute called `action`, which may be one of `click`, `double-click`, `other`, `press`, `seq`, or `simul`. The last two values denote whether the keys or buttons should be pressed in sequence, or simultaneously.

The stylesheets automatically add any connecting symbols, such as `+`, between the key names, when wrapped in `keycombo`.

#### 範例 9.22. Keys, Mouse Buttons, and Combinations Example

Usage:

```
<para>To switch to the second virtual terminal, press
  <keycombo action="simul"> <keycap>Alt</keycap>
  <keycap> F1</keycap> </keycombo> .</para>

<para>To exit <command>vi</command> without saving changes, type
  <keycombo action="seq"> <keycap>Esc</keycap><keycap> :</keycap>
  <keycap>q</keycap><keycap>!</keycap> </keycombo> .</para>

<para>My window manager is configured so that
  <keycombo action="simul"> <keycap>Alt</keycap>
  <mousebutton> right</mousebutton>
  </keycombo> mouse button is used to move windows.</para>
```

Appearance:

To switch to the second virtual terminal, press Alt+F1.

To exit **Vi** without saving changes, type Esc : q !.

My window manager is configured so that Alt+right mouse button is used to move windows.

### 9.6.5. Applications, Commands, Options, and Cites

Both applications and commands are frequently referred to when writing documentation. The distinction between them is that an application is the name of a program or suite of programs that fulfill a particular task. A command is the filename of a program that the user can type and run at a command line.

It is often necessary to show some of the options that a command might take.

Finally, it is often useful to list a command with its manual section number, in the “command(number)” format so common in Unix manuals.

Mark up application names with **application** .

To list a command with its manual section number (which should be most of the time) the DocBook element is **citerefentry** . This will contain a further two elements, **refentrytitle** and **manvolnum** . The content of **refentrytitle** is the name of the command, and the content of **manvolnum** is the manual page section.

This can be cumbersome to write, and so a series of **general entities** have been created to make this easier. Each entity takes the form **&man.manual-page.manual-section ;**.

The file that contains these entities is in **doc/share/xml/man-refs.ent** , and can be referred to using this FPI:

```
PUBLIC "-//FreeBSD//ENTITIES DocBook Manual Page Entities//EN"
```

Therefore, the introduction to FreeBSD documentation will usually include this:

```
<!DOCTYPE book PUBLIC "-//FreeBSD//DTD DocBook V4.1-Based Extension//EN" [
<!ENTITY % man PUBLIC "-//FreeBSD//ENTITIES DocBook Manual Page Entities//EN">
%man;
...
]>
```

Use **command** to include a command name “in-line” but present it as something the user should type.

Use **option** to mark up the options which will be passed to a command.

When referring to the same command multiple times in close proximity, it is preferred to use the **&man.command.section ;** notation to markup the first reference and use **command** to markup subsequent references. This makes the generated output, especially HTML, appear visually better.

範例 9.23. Applications, Commands, and Options Example

Usage:

```
<para><application> Sendmail</application> is the most
widely used Unix mail application.</para>
```

```

<para><application> Sendmail</application> includes the
  <citerefentry>
    <refentrytitle> sendmail</refentrytitle>
    <manvolnum> 8</manvolnum>
  </citerefentry> , &man.mailq.1;, and &man.newaliases.1;
  programs.</para>

<para>One of the command line parameters to <citerefentry>
  <refentrytitle> sendmail</refentrytitle>
  <manvolnum> 8</manvolnum>
</citerefentry> , <option> -bp</option> , will display the current
  status of messages in the mail queue. Check this on the command
  line by running <command> sendmail -bp</command> .</para>

```

Appearance:

Sendmail is the most widely used Unix mail application.

Sendmail includes the [sendmail\(8\)](#), [mailq\(1\)](#), and [newaliases\(1\)](#) programs.

One of the command line parameters to [sendmail\(8\)](#), `-bp`, will display the current status of messages in the mail queue. Check this on the command line by running `sendmail -bp`.



## 注意

Notice how the `&man.command.section` ; notation is easier to follow.

## 9.6.6. Files, Directories, Extensions, Device Names

To refer to the name of a file, a directory, a file extension, or a device name, use `filename`.

### 範例 9.24. filename Example

Usage:

```

<para>The source for the Handbook in English is found in
  <filename> /usr/doc/en_US.IS08859-1/books/handbook/</filename> .
  The main file is called <filename> book.xml</filename> .
  There is also a <filename> Makefile</filename> and a
  number of files with a <filename> .ent</filename> extension.</para>

<para><filename> kbd</filename> is the first keyboard detected
  by the system, and appears in
  <filename> /dev</filename> .</para>

```

Appearance:

The source for the Handbook in English is found in `/usr/doc/en_US.IS08859-1/books/handbook/`. The main file is called `book.xml`. There is also a `Makefile` and a number of files with a `.ent` extension.

`kbd0` is the first keyboard detected by the system, and appears in `/dev`.

### 9.6.7. The Name of Ports



#### FreeBSD Extension

These elements are part of the FreeBSD extension to DocBook, and do not exist in the original DocBook DTD.

To include the name of a program from the FreeBSD Ports Collection in the document, use the `package` tag. Since the Ports Collection can be installed in any number of locations, only include the category and the port name; do not include `/usr/ports`.

By default, `package` refers to a binary package. To refer to a port that will be built from source, set the `role` attribute to `port`.

#### 範例 9.25. `package` Example

Usage:

```
<para>Install the <package> net/wireshark</package> binary
package to view network traffic.</para>

<para><package role="port"> net/wireshark</package> can also be
built and installed from the Ports Collection.</para>
```

Appearance:

Install the [net/wireshark](#) binary package to view network traffic.  
[net/wireshark](#) can also be built and installed from the Ports Collection.

### 9.6.8. Hosts, Domains, IP Addresses, User Names, Group Names, and Other System Items



#### FreeBSD Extension

These elements are part of the FreeBSD extension to DocBook, and do not exist in the original DocBook DTD.

Information for “system items” is marked up with `systemitem`. The `class` attribute is used to identify the particular type of information shown.

`class="domainname"`

The text is a domain name, such as `FreeBSD.org` or `ngo.org.uk`. There is no hostname component.

`class="etheraddress"`

The text is an Ethernet MAC address, expressed as a series of 2 digit hexadecimal numbers separated by colons.

`class="fqdomainname"`

The text is a Fully Qualified Domain Name, with both hostname and domain name parts.

`class="ipaddress"`

The text is an IP address, probably expressed as a dotted quad.

`class="netmask"`

The text is a network mask, which might be expressed as a dotted quad, a hexadecimal string, or as a / followed by a number (CIDR notation).

`class="systemname"`

With `class="systemname"` the marked up information is the simple hostname, such as `freefall` or `wcarchive`.

`class="username"`

The text is a username, like `root`.

`class="groupname"`

The text is a groupname, like `wheel`.

## 範例 9.26. `systemitem` and Classes Example

Usage:

```
<para>The local machine can always be referred to by the
  name <systemitem class="systemname"> localhost</systemitem> , which
  will have the IP
  address <systemitem class="ipaddress"> 127.0.0.1</systemitem> .</para>

<para>The <systemitem class="domainname"> FreeBSD.org</systemitem>
  domain contains a number of different hosts, including
  <systemitem class="fqdomainname"> freefall.FreeBSD.org</systemitem> and
  <systemitem class="fqdomainname"> bento.FreeBSD.org</systemitem> .</
  para>

<para>When adding an <acronym>IP</acronym> alias to an
  interface (using <command>ifconfig</command> )
  <emphasis>always</emphasis> use a netmask of
  <systemitem class="netmask"> 255.255.255.255</systemitem> (which can
  also be expressed as
  <systemitem class="netmask"> 0xffffffff</systemitem> ).</para>

<para>The <acronym>MAC</acronym> address uniquely identifies
  every network card in existence. A typical
  <acronym>MAC</acronym> address looks like
  <systemitem class="etheraddress"> 08:00:20:87:ef:d0</systemitem> .</
  para>

<para>To carry out most system administration functions
  requires logging in as <systemitem class="username"> root</
  systemitem> .</para>
```

Appearance:

The local machine can always be referred to by the name `localhost` , which will have the IP address `127.0.0.1` .

The `FreeBSD.org` domain contains a number of different hosts, including `freefall.FreeBSD.org` and `bento.FreeBSD.org`.

When adding an IP alias to an interface (using `ifconfig`) always use a netmask of `255.255.255.255` (which can also be expressed as `0xffffffff`).

The MAC address uniquely identifies every network card in existence. A typical MAC address looks like `08:00:20:87:ef:d0`.

To carry out most system administration functions requires logging in as `root`.

### 9.6.9. Uniform Resource Identifiers (URIs)

Occasionally it is useful to show a Uniform Resource Identifier (URI) without making it an active hyperlink. The `uri` element makes this possible:

#### 範例 9.27. `uri` Example

Usage:

```
<para>This URL shows only as text:  
<uri>https://www.FreeBSD.org</uri>. It does not  
create a link.</para>
```

Appearance:

This URL shows only as text: `https://www.FreeBSD.org`. It does not create a link.

To create links, see [節 9.8, “Links”](#).

### 9.6.10. Email Addresses

Email addresses are marked up as `email` elements. In the HTML output format, the wrapped text becomes a hyperlink to the email address. Other output formats that support hyperlinks may also make the email address into a link.

#### 範例 9.28. `email` with a Hyperlink Example

Usage:

```
<para>An email address that does not actually exist, like  
<email>notreal@example.com</email>, can be used as an  
example.</para>
```

Appearance:

An email address that does not actually exist, like `<notreal@example.com >`, can be used as an example.

A FreeBSD-specific extension allows setting the `role` attribute to `nolink` to prevent the creation of the hyperlink to the email address.

### 範例 9.29. `email` Without a Hyperlink Example

Usage:

```
<para>Sometimes a link to an email address like
  <email role="nolink"> notreal@example.com</email> is not
  desired.</para>
```

Appearance:

Sometimes a link to an email address like [notreal@example.com](mailto:notreal@example.com) > is not desired.

## 9.6.11. Describing Makefiles



### FreeBSD Extension

These elements are part of the FreeBSD extension to DocBook, and do not exist in the original DocBook DTD.

Two elements exist to describe parts of `Makefiles`, `buildtarget` and `varname`.

`buildtarget` identifies a build target exported by a `Makefile` that can be given as a parameter to `make`. `varname` identifies a variable that can be set (in the environment, on the command line with `make`, or within the `Makefile`) to influence the process.

### 範例 9.30. `buildtarget` and `varname` Example

Usage:

```
<para>Two common targets in a <filename> Makefile</filename>
  are <buildtarget> all</buildtarget> and
  <buildtarget> clean</buildtarget> .</para>

<para>Typically, invoking <buildtarget> all</buildtarget> will
  rebuild the application, and invoking
  <buildtarget> clean</buildtarget> will remove the temporary
  files (<filename> .o</filename> for example) created by the
  build process.</para>

<para><buildtarget> clean</buildtarget> may be controlled by a
  number of variables, including <varname> CLOBBER</varname>
  and <varname> RECURSE</varname> .</para>
```

Appearance:

Two common targets in a `Makefile` are `all` and `clean`.



Typically, invoking `all` will rebuild the application, and invoking `clean` will remove the temporary files (`.o` for example) created by the build process.

`clean` may be controlled by a number of variables, including `CLOBBER` and `RECURSE`.

### 9.6.12. Literal Text

Literal text, or text which should be entered verbatim, is often needed in documentation. This is text that is excerpted from another file, or which should be copied exactly as shown from the documentation into another file.

Some of the time, `programlisting` will be sufficient to denote this text. But `programlisting` is not always appropriate, particularly when you want to include a portion of a file “in-line” with the rest of the paragraph.

On these occasions, use `literal`.

#### 範例 9.31. `literal` Example

Usage:

```
<para>The <literal>maxusers 10</literal> line in the kernel
configuration file determines the size of many system tables, and is
a rough guide to how many simultaneous logins the system will
support.</para>
```

Appearance:

The `maxusers 10` line in the kernel configuration file determines the size of many system tables, and is a rough guide to how many simultaneous logins the system will support.

### 9.6.13. Showing Items That the User Must Fill In

There will often be times when the user is shown what to do, or referred to a file or command line, but cannot simply copy the example provided. Instead, they must supply some information themselves.

`replaceable` is designed for this eventuality. Use it inside other elements to indicate parts of that element's content that the user must replace.

#### 範例 9.32. `replaceable` Example

Usage:

```
<screen>&prompt.user; <userinput> man <replaceable> command</
replaceable> </userinput> </screen>
```

Appearance:

```
% man command
```

`replaceable` can be used in many different elements, including `literal`. This example also shows that `replaceable` should only be wrapped around the content that the user is meant to provide. The other content should be left alone.

Usage:

```
<para>The maxusers n line in the kernel configuration file determines the size of many system tables, and is a rough guide to how many simultaneous logins the system will support.</para>
```

```
<para>For a desktop workstation, 32 is a good value for n .</para>
```

Appearance:

The `maxusers` `n` line in the kernel configuration file determines the size of many system tables, and is a rough guide to how many simultaneous logins the system will support.

For a desktop workstation, `32` is a good value for `n`.

### 9.6.14. Showing GUI Buttons

Buttons presented by a graphical user interface are marked with `guibutton` . To make the text look more like a graphical button, brackets and non-breaking spaces are added surrounding the text.

#### 範例 9.33. `guibutton` Example

Usage:

```
<para>Edit the file, then click [ Save ] to save the changes.</para>
```

Appearance:

Edit the file, then click `[ Save ]` to save the changes.

### 9.6.15. Quoting System Errors

System errors generated by FreeBSD are marked with `errorname` . This indicates the exact error that appears.

#### 範例 9.34. `errorname` Example

Usage:

```
<screen><errorname> Panic: cannot mount root</errorname> </screen>
```

Appearance:

```
Panic: cannot mount root
```

## 9.7. Images



### 重要

Image support in the documentation is somewhat experimental. The mechanisms described here are unlikely to change, but that is not guaranteed.

To provide conversion between different image formats, the [graphics/ImageMagick](#) port must be installed. This port is not included in the [textproc/docproj](#) meta port, and must be installed separately.

A good example of the use of images is the [doc/en\\_US.ISO8859-1/articles/vm-design/](#) document. Examine the files in that directory to see how these elements are used together. Build different output formats to see how the format determines what images are shown in the rendered document.

### 9.7.1. Image Formats

The following image formats are currently supported. An image file will automatically be converted to bitmap or vector image depending on the output document format.

These are the only formats in which images should be committed to the documentation repository.

#### EPS (Encapsulated Postscript)

Images that are primarily vector based, such as network diagrams, time lines, and similar, should be in this format. These images have a `.eps` extension.

#### PNG (Portable Network Graphic)

For bitmaps, such as screen captures, use this format. These images have the `.png` extension.

#### PIC (PIC graphics language)

PIC is a language for drawing simple vector-based figures used in the [pic\(1\)](#) utility. These images have the `.pic` extension.

#### SCR (SCREen capture)

This format is specific to screenshots of console output. The following command generates an SCR file `shot.scr` from video buffer of `/dev/ttyv0`:

```
# vidcontrol -p < /dev/ttyv0 > shot.scr
```

This is preferable to PNG format for screenshots because the SCR file contains plain text of the command lines so that it can be converted to a PNG image or a plain text depending on the output document format.

Use the appropriate format for each image. Documentation will often have a mix of EPS and PNG images. The `Makefile`s ensure that the correct format image is chosen depending on the output format used. Do not commit the same image to the repository in two different formats.



### 重要

The Documentation Project may eventually switch to using the SVG (Scalable Vector Graphic) format for vector images. However, the current state of SVG capable editing tools makes this impractical.

## 9.7.2. Image File Locations

Image files can be stored in one of several locations, depending on the document and image:

- In the same directory as the document itself, usually done for articles and small books that keep all their files in a single directory.
- In a subdirectory of the main document. Typically done when a large book uses separate subdirectories to organize individual chapters.

When images are stored in a subdirectory of the main document directory, the subdirectory name must be included in their paths in the `Makefile` and the `imagedata` element.

- In a subdirectory of `doc/share/images` named after the document. For example, images for the Handbook are stored in `doc/share/images/books/handbook`. Images that work for multiple translations are stored in this upper level of the documentation file tree. Generally, these are images that can be used unchanged in non-English translations of the document.

## 9.7.3. Image Markup

Images are included as part of a `mediaobject`. The `mediaobject` can contain other, more specific objects. We are concerned with two, the `imageobject` and the `textobject`.

Include one `imageobject`, and two `textobject` elements. The `imageobject` will point to the name of the image file without the extension. The `textobject` elements contain information that will be presented to the user as well as, or instead of, the image itself.

Text elements are shown to the reader in several situations. When the document is viewed in HTML, text elements are shown while the image is loading, or if the mouse pointer is hovered over the image, or if a text-only browser is being used. In formats like plain text where graphics are not possible, the text elements are shown instead of the graphical ones.

This example shows how to include an image called `fig1.png` in a document. The image is a rectangle with an A inside it:

```
<mediaobject>
  <imageobject>
    <imagedata fileref="fig1"/> ❶
  </imageobject>

  <textobject>
    <literallayout class="monospaced"> +-----+ ❷
|      A      |
+-----+</literallayout>
  </textobject>

  <textobject>
    <phrase>A picture</phrase> ❸
  </textobject>
</mediaobject>
```

- ❶ Include an `imagedata` element inside the `imageobject` element. The `fileref` attribute should contain the filename of the image to include, without the extension. The stylesheets will work out which extension should be added to the filename automatically.
- ❷ The first `textobject` contains a `literallayout` element, where the `class` attribute is set to `monospaced`. This is an opportunity to demonstrate ASCII art skills. This content will be used if the document is converted to plain text.

Notice how the first and last lines of the content of the `literallayout` element butt up next to the element's tags. This ensures no extraneous white space is included.

- ❶ The second `textobject` contains a single `phrase` element. The contents of this phrase will become the `alt` attribute for the image when this document is converted to HTML.

#### 9.7.4. Image Makefile Entries

Images must be listed in the `Makefile` in the `IMAGES` variable. This variable must contain the names of all the source images. For example, if there are three figures, `fig1.eps`, `fig2.png`, `fig3.png`, then the `Makefile` should have lines like this in it.

```
...
IMAGES= fig1.eps fig2.png fig3.png
...
```

or

```
...
IMAGES=  fig1.eps
IMAGES+= fig2.png
IMAGES+= fig3.png
...
```

Again, the `Makefile` will work out the complete list of images it needs to build the source document, you only need to list the image files you provided.

#### 9.7.5. Images and Chapters in Subdirectories

Be careful when separating documentation into smaller files in different directories (see [節 7.7.1, “Using General Entities to Include Files”](#)).

Suppose there is a book with three chapters, and the chapters are stored in their own directories, called `chapter1/chapter.xml`, `chapter2/chapter.xml`, and `chapter3/chapter.xml`. If each chapter has images associated with it, place those images in each chapter's subdirectory (`chapter1/`, `chapter2/`, and `chapter3/`).

However, doing this requires including the directory names in the `IMAGES` variable in the `Makefile`, and including the directory name in the `imagedata` element in the document.

For example, if the book has `chapter1/fig1.png`, then `chapter1/chapter.xml` should contain:

```
<mediaobject>
  <imageobject>
    <imagedata fileref="chapter1/fig1"/> ❶
  </imageobject>
  ...
</mediaobject>
```

- ❶ The directory name must be included in the `fileref` attribute.

The `Makefile` must contain:

```
...
IMAGES= chapter1/fig1.png
...
```

## 9.8. Links



### 注意

Links are also in-line elements. To show a URI without creating a link, see [節 9.6.9, “Uniform Resource Identifiers \(URIs\)”](#).

### 9.8.1. xml:id Attributes

Most DocBook elements accept an `xml:id` attribute to give that part of the document a unique name. The `xml:id` can be used as a target for a crossreference or link.

Any portion of the document that will be a link target must have an `xml:id` attribute. Assigning an `xml:id` to all chapters and sections, even if there are no current plans to link to them, is a good idea. These `xml:id`s can be used as unique reference points by anyone referring to the HTML version of the document.

#### 範例 9.35. xml:id on Chapters and Sections Example

```
<chapter xml:id="introduction">
  <title>Introduction</title>

  <para>This is the introduction. It contains a subsection,
    which is identified as well.</para>

  <sect1 xml:id="introduction-moredetails">
    <title>More Details</title>

    <para>This is a subsection.</para>
  </sect1>
</chapter>
```

Use descriptive values for `xml:id` names. The values must be unique within the entire document, not just in a single file. In the example, the subsection `xml:id` is constructed by appending text to the chapter `xml:id`. This ensures that the `xml:id`s are unique. It also helps both reader and anyone editing the document to see where the link is located within the document, similar to a directory path to a file.

### 9.8.2. Crossreferences with xref

`xref` provides the reader with a link to jump to another section of the document. The target `xml:id` is specified in the `linkend` attribute, and `xref` generates the link text automatically.

#### 範例 9.36. xref Example

Assume that this fragment appears somewhere in a document that includes the `xml:id` example shown above:

```
<para>More information can be found
  in <xref linkend="introduction"/> .</para>
```

```
<para>More specific information can be found
in <xref linkend="introduction-moredetails"/> .</para>
```

The link text will be generated automatically, looking like (emphasized text indicates the link text):

More information can be found in Chapter 1, Introduction.

More specific information can be found in Section 1.1, “More Details”.

The link text is generated automatically from the chapter and section number and `title` elements.

### 9.8.3. Linking to Other Documents on the Web

The link element described here allows the writer to define the link text. When link text is used, it is very important to be descriptive to give the reader an idea of where the link goes. Remember that DocBook can be rendered to multiple types of media. The reader might be looking at a printed book or other form of media where there are no links. If the link text is not descriptive enough, the reader might not be able to locate the linked section.

The `xlink:href` attribute is the URL of the page, and the content of the element is the text that will be displayed for the user to activate.

In many situations, it is preferable to show the actual URL rather than text. This can be done by leaving out the element text entirely.

#### 範例 9.37. `link` to a FreeBSD Documentation Web Page Example

Link to the book or article URL entity. To link to a specific chapter in a book, add a slash and the chapter file name, followed by an optional anchor within the chapter. For articles, link to the article URL entity, followed by an optional anchor within the article. URL entities can be found in `doc/share/xml/urls.ent`.

Usage for FreeBSD book links:

```
<para>Read the <link
xlink:href="&url.books.handbook;/svn.html#svn-intro"> SVN
introduction</link>, then pick the nearest mirror from
the list of <link
xlink:href="&url.books.handbook;/svn.html#svn-mirrors"> Subversion
mirror sites</link>.</para>
```

Appearance:

Read the [SVN introduction](#), then pick the nearest mirror from the list of [Subversion mirror sites](#).

Usage for FreeBSD article links:

```
<para>Read this
<link xlink:href="&url.articles.bsd-gpl;"> article
about the BSD license</link>, or just the
<link xlink:href="&url.articles.bsd-gpl;#intro"> introduction</
link>.</para>
```

Appearance:

Read this [article about the BSD license](#), or just the [introduction](#).

### 範例 9.38. `<link>` to a FreeBSD Web Page Example

Usage:

```
<para>Of course, you could stop reading this document and go to the
  <link xlink:href="&url.base;/index.html"> FreeBSD home page</link> ↵
instead.</para>
```

Appearance:

Of course, you could stop reading this document and go to the [FreeBSD home page](#) instead.

### 範例 9.39. `<link>` to an External Web Page Example

Usage:

```
<para>Wikipedia has an excellent reference on
  <link
    xlink:href="http://en.wikipedia.org/wiki/
GUID_Partition_Table"> GUID
Partition Tables</link> .</para>
```

Appearance:

Wikipedia has an excellent reference on [GUID Partition Tables](#).

The link text can be omitted to show the actual URL:

```
<para>Wikipedia has an excellent reference on
  GUID Partition Tables: <link
    xlink:href="http://en.wikipedia.org/wiki/
GUID_Partition_Table"> </link> .</para>
```

The same link can be entered using shorter notation instead of a separate ending tag:

```
<para>Wikipedia has an excellent reference on
  GUID Partition Tables: <link
    xlink:href="http://en.wikipedia.org/wiki/GUID_Partition_Table"/
>.</para>
```

The two methods are equivalent. Appearance:

Wikipedia has an excellent reference on GUID Partition Tables: [http://en.wikipedia.org/wiki/GUID\\_Partition\\_Table](http://en.wikipedia.org/wiki/GUID_Partition_Table) .



# 章 10. Style Sheets

XML is concerned with content, and says nothing about how that content should be presented to the reader or rendered on paper. Multiple style sheet languages have been developed to describe visual layout, including Extensible Stylesheet Language Transformation (XSLT), Document Style Semantics and Specification Language (DSSSL), and Cascading Style Sheets (CSS).

The FDP documents use XSLT stylesheets to transform DocBook into XHTML, and then CSS formatting is applied to the XHTML pages. Printable output is currently rendered with legacy DSSSL stylesheets, but this will probably change in the future.

## 10.1. CSS

Cascading Style Sheets (CSS) are a mechanism for attaching style information (font, weight, size, color, and so forth) to elements in an XHTML document without abusing XHTML to do so.

### 10.1.1. The DocBook Documents

The FreeBSD XSLT and DSSSL stylesheets refer to `docbook.css`, which is expected to be present in the same directory as the XHTML files. The project-wide CSS file is copied from `doc/share/misc/docbook.css` when documents are converted to XHTML, and is installed automatically.



# 章 11. 翻譯

本章是翻譯 FreeBSD 文件(包含：FAQ, Handbook, tutorials, manual pages等)的常見問題(FAQ)。

本文件 主要是以 FreeBSD 德文翻譯計劃的翻譯 FAQ 為母本而來的，原始撰稿者為 Frank Gründer <[elwood@mc5sys.in-berlin.de](mailto:elwood@mc5sys.in-berlin.de)>，並由 Bernd Warken <[bwarken@mayn.de](mailto:bwarken@mayn.de)> 再翻譯回英文版。

本 FAQ 是由文件工程團隊 <[doceng@FreeBSD.org](mailto:doceng@FreeBSD.org)> 所維護。

問：i18n 跟 l10n 是什麼呢？

答：i18n 是 internationalization 而 l10n 是 localization。這些都是為了書寫方便而用的簡寫。

i18n 就是開頭為“i”後面有 18 個字母，最後接“n”。同樣地，l10n 是開頭為“l”後面有 10 個字母，最後接“n”。

問：有專門給譯者參與討論的 mailing list 嗎？

答：有的，不同的語系翻譯者都各自有自屬的 mailing lists。這份 [翻譯計劃清單](#) 有列出各翻譯計劃的詳細 mailing lists 及相關網站。此外，有一般翻譯討論的 <[freebsd-translators@freebsd.org](mailto:freebsd-translators@freebsd.org)> 郵件論壇。

問：需要更多人一起參與翻譯嗎？

答：當然囉，越多人參與翻譯，那麼就能夠越快翻完，而且英文版文件若有增減、更新的話，各翻譯版也可以儘快同步囉。

不一定得是專業譯者，才能參與翻譯的。

問：有要求哪些語言能力呢

答：理論上，必須要對英文非常熟稔，而且很明顯地，對想翻譯的語言必須要能運用自如。

英文也並非一定要會的。比如說，可以把西班牙文(Spanish)的 FAQ 翻譯為匈牙利文(Hungarian)。

問：該學會哪些程式的使用呢？

答：強烈建議在自己機器上也建立 FreeBSD Subversion repository 的備份(至少文件部分)，這可以執行：

```
% svn checkout https://svn.FreeBSD.org/doc/head/ head
```

[svn.FreeBSD.org](https://svn.FreeBSD.org) 是公共的 SVN 伺服器。可以從 [Subversion 鏡相站](#) 清單檢查認證的伺服器。



## 注意

這需要安裝 [devel/subversion](#) 套件。

你可以很自在地使用 svn。他可以讓你察看文件檔案不同版本之間的修改差異。

例如你要看 `en_US.IS08859-1/books/fdp-primer/book.xml` 版本 r33733 和 r33734 的差異，請執行：

```
% svn diff -r33733:33734 en_US.IS08859-1/books/fdp-primer/book.xml
```

問：要怎麼找出來還有誰要跟我一起翻譯的呢？

答：[文件計劃的翻譯](#) 列了目前已知的各翻譯者成果，如果已經有其他人也在做跟你一樣的翻譯工作，那麼請不要重複浪費人力，請與他們聯繫看看還有哪些地方可以幫上忙的。

---

若上面並未列出你母語的翻譯，或是也有人要翻譯但還未公開宣布的話，那麼就寄信到 [FreeBSD documentation project 郵遞論壇](#)。

問：都沒人翻譯為我所使用的語言，該怎麼辦？

答：恭喜啊，你剛好踏上“FreeBSD ##### 文件翻譯計劃”的啓程之路，歡迎上船。

首先呢，先判斷是否有妥善規劃時間，因為你只有一個人在翻而已，因此，相關翻譯成果的公布、與其他可能會幫忙的志工們聯繫這些工作都是你的職責所在。

寫信到 [FreeBSD documentation project 郵遞論壇](#) 向大家宣布你正準備要翻譯，然後文件計劃的翻譯部分就會更新相關資料

若你的國家已經有人提供 FreeBSD 的 mirror(映設) 服務的話，那麼就先跟他們聯繫，並詢問你是否在上面可以有網頁空間來放相關計劃資料，以及是否可以有提供 email 帳號或 mailing list 服務。

然後，就開始翻文件囉，一開始翻譯的時候，先找些篇幅較短的文件會比較容易些——像是 FAQ 啦，或是如何上手之類的說明文章。

問：已經翻好一些文件了，該寄到哪呢？

答：這要看情況而定。若你是在翻譯團隊內做的話(像是日本、德國)，他們會有自己內部流程來決定翻譯文件怎麼送，這些大致流程會在他們網頁上面有寫。

若你是某語系的唯一翻譯者(或你是負責某翻譯計劃，並想把成果回饋給 FreeBSD 計劃)，那麼你就應該把自己的翻譯成果寄給 FreeBSD 計劃。(細節請看下個問題)

問：我是該語系的唯一翻譯者，該怎麼把翻譯成果寄出去呢？

or

我們是翻譯團隊，該怎麼把我們成員翻譯成果寄出去呢？

答：首先，請先確定你的翻譯成果組織條理分明，並可正確編譯，也就是說：把它擺到現有文件架構內是可以正確編譯成功的。

目前，FreeBSD 文件都是放在最上層的 `head/` 目錄內。而該目錄下的則依其語系來做分類命名的，依照 ISO639 定義(在比比 1999/01/20 還新的 FreeBSD 版本的 `/usr/share/misc/iso639`)。

若你這個語系可能會有不同編碼方式(像是：中文) 那麼就應該會像下面這樣，來依你所使用的編碼方式細分

最後，你應該建立好各文件的目錄了。

舉例來說，假設有瑞典文(Swedish)版的翻譯，那麼應該會長像：

```
head/
  sv_SE.IS08859-1/
    Makefile
    htdocs/
      docproj/
    books/
      faq/
    Makefile
    book.xml
```

`sv_SE.IS08859-1` 是依照 `##(lang) .##(encoding)` 的規則來建立的譯名。請注意：其中有兩個 Makefiles 檔，它們是用來建構文件的。

然後請用 `tar(1)` 與 `gzip(1)` 來把你的翻譯文件壓縮起來，並寄到本計劃來。

```
% cd doc
```

```
% tar cf swedish-docs.tar sv_SE.IS08859-1
% gzip -9 swedish-docs.tar
```

接著，把 `swedish-docs.tar.gz` 放到網頁空間上，若你沒有自己網頁空間的話(ISP不提供)，那麼可以該檔寄到 Documentation Engineering Team <[doceng@FreeBSD.org](mailto:doceng@FreeBSD.org)> 來。

還有，記得用 Bugzilla 提交一個報告以通知大家；你已經寄出翻譯文件了，還有，若有人可以幫忙檢閱、複審文件的話，對翻譯品質較好，因為這也有助於提升翻譯品質的流暢度。

最後，會有人(可能是文件計劃總管，或是 Documentation Engineering Team <[doceng@FreeBSD.org](mailto:doceng@FreeBSD.org)> 成員) 會檢閱你的翻譯文件，並確認是否可正常編譯。此外，他們會特別注意下列幾點：

1. 你的檔案是否都有用 RCS tag (像是 "ID" 之類的)？
2. `sv_SE.IS08859-1` 是否可以順利 `make all` 編譯呢？
3. `make install` 是否結果有正確

若有問題的話，那麼檢閱者會叮嚀你，來讓這些翻譯成果可以正確使用。

若沒問題的話，那麼就會很快把你的翻譯成果 `commit` 進去了。

問：可以加入某語系或某國家才有的東西到翻譯內容內嗎？

答：我們希望不要這麼做。

舉例來說，假設你正準備把 Handbook 翻譯為韓文版，並希望把韓國零售商也加到你翻譯的 Handbook 韓文版內。

我們想不出來有啥原因，為什麼不把這些資訊提供給英文版呢？(或是德文、西班牙文、日文等 ...) 因為，有可能英語讀者跑去韓國時，會想買 FreeBSD 相關產品。此外，這也可以提升 FreeBSD 的可見度，很顯然的，這並不是件壞事啊。

若你有某國才有的資料，請(用 Bugzilla)提供給英文版 Handbook 以作為修訂，然後再把英文版的修訂部分，翻為你要翻譯的 Handbook 吧。

謝謝。

問：要怎麼把該語系特有的字元寫進去翻譯內容呢？

答：文件內所有的非 ASCII(Non-ASCII) 字元，都要使用 SGML entities 才能寫進去。

簡單來說，長相一開頭會是 `&` 符號(&)，然後是該 entity 名稱，最後接上分號(;)。

這些 entity 名稱都是 ISO8879 所制訂的，而 port tree 內則 [textproc/iso8879](http://textproc/iso8879)。

以下舉一些例子：

Entity名稱: `&eacute;`;

實際樣子: `é`

Description: 小“e”，並帶尖、重音(acute accent)

Entity名稱: `&Eacute;`;

實際樣子: `É`

Description: 大“E”，並帶尖、重音(acute accent)

Entity名稱: `&uuml;`;

實際樣子: `ü`

Description: 小“u”，並帶日耳曼語系中的母音變化(umlaut)

在裝了 iso8879 這個 port 之後，就可以在 `/usr/local/share/xml/iso8879` 找到這些的詳細列表。

問：如何稱呼讀者呢？

---

答：在英文文件內，讀者都是以“you”來稱呼，而有些語言並沒有正式/非正式的區隔。

若你所要翻的語言可以區別這些差異，那麼請用該語系在一般技術文件上所使用的稱呼吧。如果容易造成困惑的話，那麼請改用較中性的稱呼來取代。

問：翻譯成果內要不要附上一些其他訊息呢？

答：要。

每份英文版原稿的開頭，通常會有像下面的內容：

```
<!--
  The FreeBSD Documentation Project

  $FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $
-->
```

The exact boilerplate may change, but it will always include a `$FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $` line and the phrase **The FreeBSD Documentation Project**. Note that the `$FreeBSD` part is expanded automatically by Subversion, so it should be empty (just `$FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $`) for new files.

Your translated documents should include their own `$FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $` line, and change the **FreeBSD Documentation Project** line to **The FreeBSD *language* Documentation Project**.

此外，還必須加上第三行來指出你所翻譯的，到底是以英文版原稿的哪一版本為母本所做的翻譯。

因此呢，西班牙文版(Spanish)的檔案開頭應該是長像這樣：

```
<!--
  The FreeBSD Spanish Documentation Project

  $FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $
  Original revision: r38674
-->
```

# 章 12. PO 翻譯

## 12.1. Introduction

GNU `gettext` 系統提供翻譯者一個簡單的方法來建立和維護文件的翻譯。翻譯的字串從原始文件題取出來到 PO (Portable Object) 檔。字串的翻譯用另外的編輯器輸入。翻譯的字串可以直接使用，或是編譯成原始文件的完整翻譯版本。

## 12.2. 快速上手

在節 1.1, “快速上手” 的步驟還必須打開 `textproc/docproj` port `TRANSLATOR` 選項。如果沒有打開這個選項，請打開選項後，重新安裝 port。

```
# cd /usr/ports/textproc/docproj
# make config
# make clean deinstall install clean
```

這個範例示範如何建立 `Leap Seconds` 短文的西班牙文翻譯

過程 12.1. 安裝 PO 編輯器

- 編輯翻譯檔案需要 PO 編輯器。這個範例使用 `editors/poedit`。

```
# cd /usr/ports/editors/poedit
# make install clean
```

過程 12.2. 初始設定

第一次建立新的翻譯時，目錄結構和 `Makefile` 必須建立或是從英文版複製過來。

1. 建立新翻譯的目錄。英文文章原始碼位於 `~/doc/en_US.IS08859-1/articles/leap-seconds/`。西班牙文翻譯將會放在 `~/doc/es_ES.IS08859-1/articles/leap-seconds/`。除了語系目錄的名稱外，其他路徑相同。

```
% svn mkdir --parents ~/doc/es_ES.IS08859-1/articles/leap-seconds/
```

2. 從原始文件處將 `Makefile` 複製到翻譯目錄。

```
% svn cp ~/doc/en_US.IS08859-1/articles/leap-seconds/Makefile \
~/doc/es_ES.IS08859-1/articles/leap-seconds/
```

過程 12.3. 翻譯

翻譯文件公有兩個步驟：將可翻譯的字串從原始文件提去出來，然後翻譯這些字串。重複這些步驟，直到翻譯者認為文件的翻譯部份已經足夠用來產生可讀的翻譯文件。

1. 從英文的原始文件提取字串到 PO 檔：

```
% cd ~/doc/es_ES.IS08859-1/articles/leap-seconds/
% make po
```

2. 使用 PO 編輯器將翻譯輸入 PO 檔。有幾個不同的編輯器可以使用。這裡用的是 `editors/poedit` 的 `poedit`。

PO 檔名是兩個字元的語系碼後面接底線和兩個字元的區域碼。以西班牙語來說，檔名是 `es_ES.po`。

```
% poedit es_ES.po
```

過程 12.4. 產生翻譯文件

#### 1. 產生翻譯文件

```
% cd ~/doc/es_ES.IS08859-1/articles/leap-seconds/
% make tran
```

產生的文件名稱與英文原始文件名稱相符，文章通常是 `article.xml`，書籍是 `book.xml`。

#### 2. 可以轉換成 HTML 來檢查產生的檔案，並用瀏覽器來察看。

```
% make FORMATS=html
% firefox article.html
```

## 12.3. 建立新翻譯

建立新翻譯文件的第一步是找到或建立一個目錄來放它。FreeBSD 將翻譯文件放在子目錄，用語系和區域以 `##_##` 來命名。`##` 是小寫的两个字元碼。接著是底線和兩個字元的大寫 *REGION* 碼。

表格 12.1. 語系名稱

語言	地區	翻譯目錄名稱	PO 檔名稱	字元集
英文	美國	en_US.IS08859-1	en_US.po	ISO 8859-1
孟加拉文	孟加拉	bn_BD.UTF-8	bn_BD.po	UTF-8
丹麥文	丹麥	da_DK.IS08859-1	da_DK.po	ISO 8859-1
德文	德國	de_DE.IS08859-1	de_DE.po	ISO 8859-1
希臘文	希臘	el_GR.IS08859-7	el_GR.po	ISO 8859-7
西班牙文	西班牙	es_ES.IS08859-1	es_ES.po	ISO 8859-1
法文	法國	fr_FR.IS08859-1	fr_FR.po	ISO 8859-1
匈牙利文	匈牙利	hu_HU.IS08859-2	hu_HU.po	ISO 8859-2
義大利文	義大利	it_IT.IS08859-15	it_IT.po	ISO 8859-15
日文	日本	ja_JP.eucJP	ja_JP.po	EUC JP
韓文	韓國	ko_KR.UTF-8	ko_KR.po	UTF-8
蒙古文	蒙古	mn_MN.UTF-8	mn_MN.po	UTF-8
荷蘭文	荷蘭	nl_NL.IS08859-1	nl_NL.po	ISO 8859-1
挪威文	挪威	no_NO.IS08859-1	no_NO.po	ISO 8859-1
波蘭文	波蘭	pl_PL.IS08859-2	pl_PL.po	ISO 8859-2
葡萄牙文	巴西	pt_BR.IS08859-1	pt_BR.po	ISO 8859-1
俄文	俄羅斯	ru_RU.KOI8-R	ru_RU.po	KOI8-R
賽爾維亞	賽爾維亞文	sr_YU.IS08859-2	sr_YU.po	ISO 8859-2
土耳其文	土耳其	tr_TR.IS08859-9	tr_TR.po	ISO 8859-9
中文	中國	zh_CN.UTF-8	zh_CN.po	UTF-8



語言	地區	翻譯目錄名稱	PO 檔名稱	字元集
中文	台灣	zh_TW.UTF-8	zh_TW.po	UTF-8

翻譯位於主要文件目錄的子目錄，這裡假設如 節 1.1, “快速上手” 所示，是 `~/doc/`。例如德文位於 `~/doc/de_DE.ISO8859-1/`，法文位於 `~/doc/fr_FR.ISO8859-1/`。

每個語系目錄包含不同文件類型的子目錄，通常是 `articles/` 和 `books/`。

將目錄名稱組合起來就是文章或書的完整路徑。例如，NanoBSD 文章的法語翻譯在 `~/doc/fr_FR.ISO8859-1/articles/nanobsd/`。而使用手冊的蒙古文翻譯在 `~/doc/mn_MN.UTF-8/books/handbook/`。

當翻譯到一個新語系時必須建立一個新的語系目錄。如果語系目錄已經存在，那只需要有 `articles/` 或 `books/` 的子目錄。

FreeBSD 文件的編譯是由同一個目錄的 `Makefile` 控制。簡單的文章可以從原始的英語目錄直接複製 `Makefile` 過來。書籍的翻譯流程結合多個獨立的 `book.xml` 和 `chapter.xml` 成為一個檔案，所以書籍翻譯的 `Makefile` 必須複製並修改。

### 範例 12.1. 建立 Porter 手冊的西班牙語翻譯

建立 Porter 手冊的西班牙文翻譯。原文是位於 `~/doc/en_US.ISO8859-1/books/porters-handbook/` 的書籍。

1. 西班牙文 `books` 目錄 `~/doc/es_ES.ISO8859-1/books/` 已經存在，所以只要建立 Porter 手冊的子目錄：

```
% cd ~/doc/es_ES.ISO8859-1/books/
% svn mkdir porters-handbook
A      porters-handbook
```

2. 從原始文件的目錄複製 `Makefile`：

```
% cd ~/doc/es_ES.ISO8859-1/books/porters-handbook
% svn cp ~/doc/en_US.ISO8859-1/books/porters-handbook/Makefile .
A      Makefile
```

修改 `Makefile` 內容以產生單一的 `book.xml`：

```
#
# $FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $
#
# Build the FreeBSD Porter's Handbook.
#

MAINTAINER=doc@FreeBSD.org

DOC?= book

FORMATS?= html-split

INSTALL_COMPRESSED?= gz
INSTALL_ONLY_COMPRESSED?=

# XML content
SRCS= book.xml

# Images from the cross-document image library
```

```

IMAGES_LIB+= callouts/1.png
IMAGES_LIB+= callouts/2.png
IMAGES_LIB+= callouts/3.png
IMAGES_LIB+= callouts/4.png
IMAGES_LIB+= callouts/5.png
IMAGES_LIB+= callouts/6.png
IMAGES_LIB+= callouts/7.png
IMAGES_LIB+= callouts/8.png
IMAGES_LIB+= callouts/9.png
IMAGES_LIB+= callouts/10.png
IMAGES_LIB+= callouts/11.png
IMAGES_LIB+= callouts/12.png
IMAGES_LIB+= callouts/13.png
IMAGES_LIB+= callouts/14.png
IMAGES_LIB+= callouts/15.png
IMAGES_LIB+= callouts/16.png
IMAGES_LIB+= callouts/17.png
IMAGES_LIB+= callouts/18.png
IMAGES_LIB+= callouts/19.png
IMAGES_LIB+= callouts/20.png
IMAGES_LIB+= callouts/21.png

URL_RELPREFIX?= ../../../../
DOC_PREFIX?= ${CURDIR}/../../../../

.include "${DOC_PREFIX}/share/mk/doc.project.mk"

```

現在文件結構已經準備好讓翻譯者執行 `make po` 開始翻譯。

## 範例 12.2. 建立 PGP 金鑰文章的法語翻譯。

建立 `PGP 金鑰文章` 的法文翻譯。原文是位於 `~/doc/en_US.IS08859-1/articles/pgpkeys/` 的文章。

1. 法文 article 目錄 `~/doc/fr_FR.IS08859-1/articles/` 已經存在，所以只要建立 PGP 金鑰文章的子目錄：

```

% cd ~/doc/fr_FR.IS08859-1/articles/
% svn mkdir pgpkeys
A      pgpkeys

```

2. 從原始文件的目錄複製 Makefile：

```

% cd ~/doc/fr_FR.IS08859-1/articles/pgpkeys
% svn cp ~/doc/en_US.IS08859-1/articles/pgpkeys/Makefile .
A      Makefile

```

檢查 `Makefile` 的內容。因為這是簡單的文章，此例的 `Makefile` 不用修改。第二行的 `$FreeBSD...$` 版本字串將會在檔案提交時被版本控制系統替換掉。

```

#
# $FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $
#
# Article: PGP Keys

DOC?= article

FORMATS?= html

```

```

WITH_ARTICLE_TOC?= YES

INSTALL_COMPRESSED?= gz
INSTALL_ONLY_COMPRESSED?=

SRCS=  article.xml

# To build with just key fingerprints, set FINGERPRINTS_ONLY.

URL_RELPREFIX?= ../../../../
DOC_PREFIX?=  ${CURDIR}/../../../../

.include "${DOC_PREFIX}/share/mk/doc.project.mk"

```

文章結構處理好後，可以執行建立 `make po` 建立 PO 檔。

## 12.4. 翻譯

gettext 系統大幅減少翻譯者要追蹤的事情。字串從原始文件提取到 PO 檔。再用 PO 檔編輯器輸入字串的翻譯。

FreeBSD PO 翻譯系統不會覆蓋掉 PO 檔。所以提取步驟可以在任何時候重複執行來更新 PO 檔。

用 PO 檔編輯器來編輯檔案。此例是用 [editors/poedit](#)，因為它很簡單而且系統需求低。其他的 PO 檔編輯器提供一些特點，能使翻譯工作更輕鬆。Ports 裡有數個編輯器，包括 [devel/gtranslator](#)。

保留 PO 檔是很重要的。它包含所有的翻譯成果。

### 範例 12.3. 翻譯 Porter 手冊到西班牙文

輸入 Porter 手冊的西班牙文內容

1. 切換到西班牙文 Porter 手冊的目錄並更新 PO 檔。產生的 PO 檔如 [表格 12.1](#)，“語系名稱”所示，名叫 `es_ES.po`。

```

% cd ~/doc/es_ES.ISO8859-1/books/porters-handbook
% make po

```

2. 使用 PO 檔編輯器輸入翻譯：

```

% poedit es_ES.po

```

## 12.5. 給翻譯者的提示

### 12.5.1. 保留 XML 標籤

Preserve XML tags that are shown in the English original.

### 範例 12.4. 保留 XML 標籤

英文原文：

```
If <acronym>NTP</acronym> is not being used
```

西班牙文翻譯：

```
Si <acronym>NTP</acronym> no se utiliza
```

### 12.5.2. 保留空白

保留要翻譯字串前後的空白。翻譯的版本也要有這些空白。

### 12.5.3. 不要翻譯的標籤

有些標籤的內容要一字不差地保留，不要翻譯。

- <citerefentry>
- <command>
- <filename>
- <literal>
- <manvolnum>
- <orgname>
- <package>
- <programlisting>
- <prompt>
- <refentrytitle>
- <screen>
- <userinput>
- <varname>

### 12.5.4. \$FreeBSD: head/zh\_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu \$ Strings

The \$FreeBSD: head/zh\_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu \$ version strings used in files require special handling. In examples like [範例 12.1](#), “[建立 Porter 手冊的西班牙語翻譯](#)”, these strings are not meant to be expanded. The English documents use `&dollar;` entities to avoid including actual literal dollar signs in the file:

```
&dollar;FreeBSD&dollar;
```

版本控制符號不會把 `&dollar;` entities 看成金錢符號，所以不會把字串展開成版本字串。

When a PO file is created, the `&dollar;` entities used in examples are replaced with actual dollar signs. The resulting literal `$FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $` string will be wrongly expanded by the version control system when the file is committed.

英文文件用的相同技術可以被用在翻譯上。翻譯時用 `&dollar;` 來取代金錢符號，輸入到 PO 檔編輯器：

```
&dollar;FreeBSD&dollar;
```

## 12.6. 編譯翻譯的文件

原文的翻譯版本可以在任何時候被建立。未翻譯的部份會以英文呈獻。大部份 PO 編輯器有指標可以顯示翻譯完成度。這讓翻譯者更容易看翻譯好的字串是否足夠來編譯最終的文件。

### 範例 12.5. 編譯西班牙文 Porter 手冊

編譯和預覽之前範例翻譯的西班牙文版 Porter 手冊

1. 編譯翻譯好的文件。因為原文是書籍，所以產生的文件是 `book.xml`。

```
% cd ~/doc/es_ES.IS08859-1/books/porters-handbook
% make tran
```

2. 轉換翻譯好的 `book.xml` 成 HTML 並用 Firefox 來瀏覽。這和英文版是相同的步驟，其他 FORMATS 也可以這樣做。請見表格 5.1, “Common Output Formats”。

```
% make FORMATS=html
% firefox book.html
```

## 12.7. 提交新翻譯

準備要提交的新翻譯。這包含新增檔案到版本控制系統，對檔案設定額外的屬性，並建立 diff 來提交。

範例中產生的 diff 檔可以被附加到 [documentation bug report](#) 或 [code review](#)。

### 範例 12.6. NanoBSD 文章的西班牙文翻譯

1. 增加 FreeBSD 版本字串註解到 PO 檔的第一行：

```
#$FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $
```

2. 增加 Makefile、PO 檔和產生的 XML 翻譯到版本控制系統：

```
% cd ~/doc/es_ES.IS08859-1/articles/nanobsd/
% ls
Makefile article.xml es_ES.po
% svn add Makefile article.xml es_ES.po
A      Makefile
A      article.xml
A      es_ES.po
```

3. Set the Subversion `svn:keywords` properties on these files to `FreeBSD=%H` so `$FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $` strings are expanded into the path, revision, date, and author when committed:

```
% svn propset svn:keywords FreeBSD=%H Makefile article.xml ǵ
es_ES.po
property 'svn:keywords' set on 'Makefile'
property 'svn:keywords' set on 'article.xml'
property 'svn:keywords' set on 'es_ES.po'
```

4. 設定檔案的MIME 類型。書籍和文章是 `text/xml` ，PO 檔是 `text/x-gettext-translation` 。

```
% svn propset svn:mime-type text/x-gettext-translation es_ES.po
property 'svn:mime-type' set on 'es_ES.po'
% svn propset svn:mime-type text/xml article.xml
property 'svn:mime-type' set on 'article.xml'
```

5. 從 `~/doc/` 建立這些新檔案的 `diff`，讓檔名顯示完整的路徑。這可以幫助提交者辨識目標語系目錄。

```
% cd ~/doc
svn diff es_ES.ISO8859-1/articles/nanobsd/ > /tmp/es_nanobsd.ǵ
diff
```

## 範例 12.7. Explaining-BSD 文章的韓文 UTF-8 翻譯

1. 增加 FreeBSD 版本字串註解到 PO 檔的第一行：

```
#$FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 ǵ
02:42:33Z rcyu $
```

2. 增加 `Makefile`、PO 檔和產生的 XML 翻譯到版本控制系統：

```
% cd ~/doc/ko_KR.UTF-8/articles/explaining-bsd/
% ls
Makefile article.xml ko_KR.po
% svn add Makefile article.xml ko_KR.po
A      Makefile
A      article.xml
A      ko_KR.po
```

3. Set the Subversion `svn:keywords` properties on these files to `FreeBSD=%H` so `$FreeBSD: head/zh_TW.UTF-8/books/fdp-primer/book.xml 49503 2016-10-12 02:42:33Z rcyu $` strings are expanded into the path, revision, date, and author when committed:

```
% svn propset svn:keywords FreeBSD=%H Makefile article.xml ǵ
ko_KR.po
property 'svn:keywords' set on 'Makefile'
property 'svn:keywords' set on 'article.xml'
property 'svn:keywords' set on 'ko_KR.po'
```

4. 設定檔案的 MIME 類型。因為這些檔案使用 UTF-8 字元集，這也需要指定。為了防止版本控制系統將這些檔案誤認為二進位資料，`fbds:notbinary` 屬性也需要設定。

```
% svn propset svn:mime-type 'text/x-gettext-translation#
charset=UTF-8' ko_KR.po
property 'svn:mime-type' set on 'ko_KR.po'
```

```
% svn propset fbsd:notbinary yes ko_KR.po
property 'fbsd:notbinary' set on 'ko_KR.po'
% svn propset svn:mime-type 'text/xml#charset=UTF-8' article.xml
property 'svn:mime-type' set on 'article.xml'
% svn propset fbsd:notbinary yes article.xml
property 'fbsd:notbinary' set on 'article.xml'
```

5. 從 ~/doc/ 建立這些新檔案的 diff。

```
% cd ~/doc
svn diff ko_KR.UTF-8/articles/explaining-bsd > /tmp/ko-
explaining.diff
```





# 章 13. 寫作風格

## 13.1. 叮嚀

Technical documentation can be improved by consistent use of several principles. Most of these can be classified into three goals: be clear, be complete, and be concise. These goals can conflict with each other. Good writing consists of a balance between them.

### 13.1.1. Be Clear

Clarity is extremely important. The reader may be a novice, or reading the document in a second language. Strive for simple, uncomplicated text that clearly explains the concepts.

Avoid flowery or embellished speech, jokes, or colloquial expressions. Write as simply and clearly as possible. Simple text is easier to understand and translate.

Keep explanations as short, simple, and clear as possible. Avoid empty phrases like “in order to”, which usually just means “to”. Avoid potentially patronizing words like “basically”. Avoid Latin terms like “i.e.” or “cf.”, which may be unknown outside of academic or scientific groups.

Write in a formal style. Avoid addressing the reader as “you”. For example, say “copy the file to `/tmp`” rather than “you can copy the file to `/tmp`”.

Give clear, correct, tested examples. A trivial example is better than no example. A good example is better yet. Do not give bad examples, identifiable by apologies or sentences like “but really it should never be done that way”. Bad examples are worse than no examples. Give good examples, because even when warned not to use the example as shown, the reader will usually just use the example as shown.

Avoid weasel words like “should”, “might”, “try”, or “could”. These words imply that the speaker is unsure of the facts, and create doubt in the reader.

Similarly, give instructions as imperative commands: not “you should do this”, but merely “do this”.

### 13.1.2. Be Complete

Do not make assumptions about the reader's abilities or skill level. Tell them what they need to know. Give links to other documents to provide background information without having to recreate it. Put yourself in the reader's place, anticipate the questions they will ask, and answer them.

### 13.1.3. Be Concise

While features should be documented completely, sometimes there is so much information that the reader cannot easily find the specific detail needed. The balance between being complete and being concise is a challenge. One approach is to have an introduction, then a “quick start” section that describes the most common situation, followed by an in-depth reference section.

## 13.2. Guidelines

To promote consistency between the myriad authors of the FreeBSD documentation, some guidelines have been drawn up for authors to follow.

Use American English Spelling

There are several variants of English, with different spellings for the same word. Where spellings differ, use the American English variant. “color”, not “colour”, “rationalize”, not “rationalise”, and so on.



## 注意

The use of British English may be accepted in the case of a contributed article, however the spelling must be consistent within the whole document. The other documents such as books, web site, manual pages, etc. will have to use American English.

### Do not use contractions

Do not use contractions. Always spell the phrase out in full. “Don't use contractions” is wrong.

Avoiding contractions makes for a more formal tone, is more precise, and is slightly easier for translators.

### Use the serial comma

In a list of items within a paragraph, separate each item from the others with a comma. Separate the last item from the others with a comma and the word “and”.

For example:

This is a list of one, two and three items.

Is this a list of three items, “one”, “two”, and “three”, or a list of two items, “one” and “two and three”?

It is better to be explicit and include a serial comma:

This is a list of one, two, and three items.

### Avoid redundant phrases

Do not use redundant phrases. In particular, “the command”, “the file”, and “man command” are often redundant.

For example, commands:

Wrong: Use the `SVN` command to update sources.

Right: Use `svn` to update sources.

Filenames:

Wrong: ... in the filename `/etc/rc.local` ...

Right: ... in `/etc/rc.local` ...

Manual page references (the second example uses `citerefentry` with the `&man.csh.1;` entity):

Wrong: See `man csh` for more information.

Right: See `cs(1)`.

### Two spaces between sentences

Always use two spaces between sentences, as it improves readability and eases use of tools such as Emacs.

A period and spaces followed by a capital letter does not always mark a new sentence, especially in names. “Jordan K. Hubbard” is a good example. It has a capital **H** following a period and a space, and is certainly not a new sentence.

For more information about writing style, see [Elements of Style](#), by William Strunk.

## 13.3. 風格指南

由於文件是由眾多作者所維護，為了保持寫作風格的一貫性，請遵守下列撰寫風格慣例。

### 13.3.1. 大小寫

Tag 的部份都是用小寫字母，譬如是用 `para`，而非 `PARA`。

而 SGML 內文則是用大寫字母表示，像是：`<!ENTITY...>` 及 `<!DOCTYPE...>`，而不是 `<!entity...>` 及 `<!doctype...>`。

### 13.3.2. Acronyms

縮寫字(acronym)通常在書中第一次提到時，必須同時列出完整拼法，比如：“Network Time Protocol (NTP)”。定義縮寫字之後，應該儘量只使用該縮寫字(而非完整詞彙，除非使用完整詞彙可以更能表達語意)來表達即可。通常每本書只會第一次提到時，才會列出完整詞彙，但若您高興也可以在每章第一次提到時又列出完整詞彙。

所有縮寫要包在 `acronym` 標籤內。

### 13.3.3. 縮排

無論檔案縮排設定為何，每個檔案的第一行都不縮排。

未完的標籤會以多兩個空白來增加縮排，結尾的標籤則少兩個空白來縮減縮排。若已達 8 個空白，則以 `tab` 取代之。此外，在 `tab` 前面不要再用空白，也不要每行後面加上空白。每個 tag 的內文若超過一行的話，則接下來的就多兩個空白以做縮排。

舉個例子，這節所用的寫法大致是下面這樣：

```
<chapter>
  <title>...</title>

  <sect1>
    <title>...</title>

    <sect2>
      <title>Indentation</title>

      <para>The first line in each file starts with no indentation,
<emphasis> regardless</emphasis> of the indentation level of
the file which might contain the current file#</para>

      ...
    </sect2>
  </sect1>
</chapter>
```

有長屬性的標籤也是遵循一樣的原則。遵守縮排規則可以幫助編輯和作者了解哪些內容在標籤內：

```
<para>See the <link
  linkend="gmirror-troubleshooting"> Troubleshooting</link>
section if there are problems booting. Powering down and
disconnecting the original <filename>ada0</filename> disk
will allow it to be kept as an offline backup.</para>

<para>It is also possible to journal the boot disk of a &os;
system. Refer to the article <link
  xlink:href="&url.articles.gjournal-desktop;"> Implementing UFS
```

```
Journaling on a Desktop PC</link> for detailed
instructions.</para>
```

When an element is too long to fit on the remainder of a line without wrapping, moving the start tag to the next line can make the source easier to read. In this example, the `systemitem` element has been moved to the next line to avoid wrapping and indenting:

```
<para>With file flags, even
  <systemitem class="username"> root</systemitem> can be
  prevented from removing or altering files#</para>
```

Configurations to help various text editors conform to these guidelines can be found in [章 14, Editor Configuration](#).

### 13.3.4. 標籤風格

#### 13.3.4.1. 標籤空行

同一縮排等級的標籤要以空一行來做區隔，而不同縮排等級的則不必。比如：

```
<article lang='en'>
  <articleinfo>
    <title>NIS</title>

    <pubdate> October 1999</pubdate>

    <abstract>
      <para>...
    ...
  ...</para>
  </abstract>
</articleinfo>

  <sect1>
    <title> ...</title>

    <para> ...</para>
  </sect1>

  <sect1>
    <title> ...</title>

    <para> ...</para>
  </sect1>
</article>
```

#### 13.3.4.2. 標籤的分行

像是 `itemizedlist` 這類的標籤事實上本身不含任何文字資料，必須得由其他標籤來補充內文。這類的標籤會獨用一整行。

另外，像是 `para` 及 `term` 這類的標籤並不需搭配其他標籤，就可附上文字資料，並且在標籤後面的同一行內即可立即寫上這些內文。

當然，這兩類的標籤結尾時也是跟上面道理相同。

不過，當上述這兩種標籤混用時，會有很明顯的困擾。

當第一類標籤的後面接上第二類標籤的話，那麼要把這兩類標籤各自分行來寫。後者標籤的段落，也是需要做適當縮排調整。

而第二類標籤結尾時，可以與第一類標籤的結尾放在同一行。

### 13.3.5. 空白的更改

在提交修改時，請別在修改內容的同時，也一起更改編排格式。

如此一來，像是 Handbook 翻譯團隊才能迅速找出你改了哪些內容，而不用費心思去判斷該行的改變，是由於格式重排或者內容異動。

舉例說明，若要在某段加上兩個句子，如此一來該段落的某行勢必會超出 80 縱列，這時請先 commit 修改。接著，再修飾過長行落的換行，然後再次 commit 之。而第二次的 commit 紀錄，請明確說明這只是 whitespace-only (修改空白而已) 的更改，如此一來，翻譯團隊就可以忽略第二次 commit 了。

### 13.3.6. Nonbreaking space

請避免一些情況下的斷行：造成版面醜醜的、或是須連貫表達的同一句子。斷行的情況會隨所閱讀的工具不同而有所不同。尤其是透過純文字瀏覽器來看 HTML 時會更明顯看到類似下面這樣不好的編排段落：

```
Data capacity ranges from 40 MB to 15
GB# Hardware compression ...
```

請使用 `&nbsp;` 以避免同句子之間的斷行，以下示範如何使用 nonbreaking spaces：

- 在數字與單位之間：

```
57600&nbsp;bps
```

- 在程式名稱與版號之間：

```
&os;&nbsp;9.2
```

- multiword 之間 (使用時請小心，像是 “The FreeBSD Brazilian Portuguese Documentation Project” 這類由三到四個字所組成的，則不用加)：

```
Sun&nbsp;Microsystems
```

## 13.4. 詞彙表

以下詞彙表列出使用在 FreeBSD 文件的正確拼法和大小寫。若找不到要找的詞彙，請詢問 [FreeBSD documentation project mailing list](#)。

Word	XML Code	Notes
CD-ROM	<code>&lt;acronym&gt; CD-ROM&lt;/acronym&gt;</code>	
DoS (Denial of Service)	<code>&lt;acronym&gt; DoS&lt;/acronym&gt;</code>	
email		
file system		
IPsec		
Internet		
manual page		
mail server		
name server		
Ports Collection		

Word	XML Code	Notes
read-only		
Soft Updates		
stdin	<code>&lt;varname&gt; stdin&lt;/varname&gt;</code>	
stdout	<code>&lt;varname&gt; stdout&lt;/varname&gt;</code>	
stderr	<code>&lt;varname&gt; stderr&lt;/varname&gt;</code>	
Subversion	<code>&lt;application&gt; Subversion&lt;/application&gt;</code>	不要大寫SVN來表示 Subversion 應用程式。以 <code>&lt;command&gt; svn&lt;/command&gt;</code> 來表示指令。
UNIX®	<code>&amp;unix;</code>	
userland		指user space，不是核心。
web server		

# 章 14. Editor Configuration

Adjusting text editor configuration can make working on document files quicker and easier, and help documents conform to FDP guidelines.

## 14.1. Vim

Install from [editors/vim](#) or [editors/vim-lite](#), then follow the configuration instructions in [節 14.1.2](#), “Configuration”.

### 14.1.1. Use

Press P to reformat paragraphs or text that has been selected in Visual mode. Press T to replace groups of eight spaces with a tab.

### 14.1.2. Configuration

Edit `~/ .vimrc`, adding these lines to the end of the file:

```
if has("autocmd")
  au BufNewFile,BufRead *.sgml,*.ent,*.xsl,*.xml call Set_SGML()
  au BufNewFile,BufRead *.* call ShowSpecial()
endif " has(autocmd)

function Set_Highlights()
  "match ExtraWhitespace /^\s* \s*\|\s\+$/
  highlight default link OverLength ErrorMsg
  match OverLength /\%71v.\+/\
  return 0
endfunction

function ShowSpecial()
  setlocal list listchars=tab:>>,trail:*,eol:$
  hi def link nontext ErrorMsg
  return 0
endfunction " ShowSpecial()

function Set_SGML()
  setlocal number
  syn match sgmSpecial "&[^;]*;"
  setlocal syntax=sgml
  setlocal filetype=xml
  setlocal shiftwidth=2
  setlocal textwidth=70
  setlocal tabstop=8
  setlocal softtabstop=2
  setlocal formatprg="fmt -p"
  setlocal autoindent
  setlocal smartindent
  " Rewrap paragraphs
  noremap P gqj
  " Replace spaces with tabs
  noremap T :s/ / \t /<CR>
  call ShowSpecial()
  call Set_Highlights()
  return 0
endfunction " Set_SGML()
```

## 14.2. Emacs

Install from [editors/emacs](#) or [editors/xemacs](#).

Edit `~/ .emacs` , adding this line:

```
(add-hook 'nxml-mode-hook 'turn-on-auto-fill)
```

## 14.3. nano

Install from [editors/nano](#) or [editors/nano-devel](#).

### 14.3.1. Configuration

Copy the sample XML syntax highlight file to the user's home directory:

```
% cp /usr/local/share/nano/xml.nanorc ~/.nanorc
```

Add these lines to the new `~/ .nanorc` .

```
syntax "xml" "\.([jrs]html?|xml|xslt?)$"
# trailing whitespace
color ,blue "[[:space:]]+$"
# multiples of eight spaces at the start a line
# (after zero or more tabs) should be a tab
color ,blue "^[[:TAB:]]*[ -]{8}+"
# tabs after spaces
color ,yellow "( )+TAB"
# highlight indents that have an odd number of spaces
color ,red "^[[: -:]]{2}+(TAB+)*[ -]{1}[^ -]{1}"
# lines longer than 70 characters
color ,yellow "^(.{71})|(TAB.{63})|(TAB{2}.{55})|(TAB{3}.{47}).+ $"
```

Process the file to create embedded tabs:

```
% perl -i' -pe 's/TAB/\t/g' ~/.nanorc
```

### 14.3.2. Use

Specify additional helpful options when running the editor:

```
% nano -AKipwz -r 70 -T8 chapter.xml
```

Users of [csh\(1\)](#) can define an alias in `~/ .cshrc` to automate these options:

```
alias nano "nano -AKipwz -r 70 -T8"
```

After the alias is defined, the options will be added automatically:

```
% nano chapter.xml
```



# 章 15. 他山之石

This document is deliberately not an exhaustive discussion of XML, the DTDs listed, and the FreeBSD Documentation Project. For more information about these, you are encouraged to see the following web sites.

## 15.1. FreeBSD 文件計劃

- [FreeBSD 文件計劃網頁](#)
- [FreeBSD 使用手冊](#)

## 15.2. XML

- [W3C's XML 網頁](#) [SGML/XML 網頁](#)

## 15.3. HTML

- [全球資訊網協會](#)
- [The HTML 4.0 規格表](#)

## 15.4. DocBook

- [The DocBook 技術委員會](#)，DocBook DTD的維護者
- [DocBook : The Definitive Guide](#)，DocBook DTD的線上文件。
- [The DocBook Open Repository](#) contains DSSSL stylesheets and other resources for people using DocBook



## 附錄 A. 舉例

These examples are not exhaustive—they do not contain all the elements that might be desirable to use, particularly in a document's front matter. For more examples of DocBook markup, examine the XML source for this and other documents available in the Subversion `doc` repository, or available online starting at <http://svnweb.FreeBSD.org/doc/>.

### A.1. DocBook book

#### 範例 A.1. DocBook book

```
<!DOCTYPE book PUBLIC "-//FreeBSD//DTD DocBook XML V5.0-Based Extension//EN"
"http://www.FreeBSD.org/XML/share/xml/freebsd50.dtd">

<book xmlns="http://docbook.org/ns/docbook"
xmlns:xlink="http://www.w3.org/1999/xlink" version="5.0"
xml:lang="en">

  <info>
    <title>An Example Book</title>

    <author>
      <personname>
        <firstname>Your first name</firstname>
        <surname>Your surname</surname>
      </personname>

      <affiliation>
<address>
      <email>foo@example.com</email>
</address>
      </affiliation>
    </author>

    <copyright>
      <year>2000</year>
      <holder>Copyright string here</holder>
    </copyright>

    <abstract>
      <para>If your book has an abstract then it should go here#</para>
    </abstract>
  </info>

  <preface>
    <title>Preface</title>

    <para>Your book may have a preface, in which case it should be placed
      here#</para>
  </preface>

  <chapter>
    <title>My First Chapter</title>
```

```

<para>This is the first chapter in my book#</para>

<sect1>
  <title>My First Section</title>

  <para>This is the first section in my book#</para>
</sect1>
</chapter>
</book>

```

## A.2. DocBook article

### 範例 A.2. DocBook article

```

<!DOCTYPE article PUBLIC "-//FreeBSD//DTD DocBook XML V5.0-Based Extension//EN"
"http://www.FreeBSD.org/XML/share/xml/freebsd50.dtd">

<article xmlns="http://docbook.org/ns/docbook"
  xmlns:xlink="http://www.w3.org/1999/xlink" version="5.0"
  xml:lang="en">

  <info>
    <title>An Example Article</title>

    <author>
      <personname>
        <firstname>Your first name</firstname>
        <surname>Your surname</surname>
      </personname>

      <affiliation>
    <address>
      <email>foo@example.com</email>
    </address>
      </affiliation>
    </author>

    <copyright>
      <year>2000</year>
      <holder>Copyright string here</holder>
    </copyright>

    <abstract>
      <para>If your article has an abstract then it should go here#</para>
    </abstract>
  </info>

  <sect1>
    <title>My First Section</title>

    <para>This is the first section in my article#</para>

  <sect2>

```

```
<title>My First Sub-Section</title>
  <para>This is the first sub-section in my article#</para>
</sect2>
</sect1>
</article>
```



# 索引

## **F**

Formal Public Identifier, 26, 26

