1.2 What is a shell?

At its base, a shell is simply a macro processor that executes commands. The term macro processor means functionality where text and symbols are expanded to create larger expressions.

在其基础上，shell 只是一个执行命令的宏处理器。 宏处理器一词是指扩展文本和符号以创建更大表达式的功能。

A Unix shell is both a command interpreter and a programming language. As a command interpreter, the shell provides the user interface to the rich set of GNU utilities. The programming language features allow these utilities to be combined. Files containing commands can be created, and become commands themselves. These new commands have the same status as system commands in directories such as /bin, allowing users or groups to establish custom environments to automate their common tasks.

Unix shell 既是命令解释器又是编程语言。 作为一个命令解释器，shell 为丰富的 GNU 实用程序集提供了用户界面。 编程语言功能允许组合这些实用程序。 可以创建包含命令的文件，并成为命令本身。 这些新命令与 /bin 等目录中的系统命令具有相同的状态，允许用户或组建立自定义环境以自动化其常见任务。

Shells may be used interactively or non-interactively. In interactive mode, they accept input typed from the keyboard. When executing non-interactively, shells execute commands read from a file.

Shell 可以交互或非交互方式使用。 在交互模式下，它们接受从键盘输入的输入。 当以非交互方式执行时，shell 执行从文件中读取的命令。

A shell allows execution of GNU commands, both synchronously and asynchronously. The shell waits for synchronous commands to complete before accepting more input; asynchronous commands continue to execute in parallel with the shell while it reads and executes additional commands. The redirection constructs permit fine-grained control of the input and output of those commands. Moreover, the shell allows control over the contents of commands' environments.

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shell 允许同步和异步执行 GNU 命令。 shell 在接受更多输入之前等待同步命令完成； 异步命令在读取和执行其他命令时继续与 shell 并行执行。 重定向构造允许对这些命令的输入和输出进行细粒度控制。 此外，shell 允许控制命令环境的内容。

Shells also provide a small set of built-in commands (builtins) implementing functionality impossible or inconvenient to obtain via separate utilities. For example, cd, break, continue, and exec cannot be

implemented outside of the shell because they directly manipulate the shell itself. The history, getopts, kill, or pwd builtins, among others, could be implemented in separate utilities, but they are more convenient to use as builtin commands. All of the shell builtins are described in subsequent sections.

Shell 还提供了一小组内置命令（builtins），这些命令实现了通过单独的实用程序无法或不方便获得的功能。 例如，cd、break、continue 和 exec 不能在 shell 之外实现，因为它们直接操纵 shell 本身。 history、getopts、kill 或 pwd 等内置命令可以在单独的实用程序中实现，但它们更方便用作内置命令。 所有的 shell 内建函数都在后续章节中描述。

While executing commands is essential, most of the power (and complexity) of shells is due to their embedded programming languages. Like any high-level language, the shell provides variables, flow control constructs, quoting, and functions.

虽然执行命令是必不可少的，但 shell 的大部分功能（和复杂性）都归功于它们的嵌入式编程语言。 与任何高级语言一样，shell 提供变量、流控制结构、引用和函数。

Shells offer features geared specifically for interactive use rather than to augment the programming language. These interactive features include job control, command line editing, command history and aliases. Each of these features is described in this manual.

Shell 提供专门用于交互使用而不是增强编程语言的功能。 这些交互功能包括作业控制、命令行编辑、命令历史记录和别名。 本手册中描述了这些功能中的每一个。
