

The bash shell

← Chapter 2: Getting Started With Shell Programming • **Home** • Shell commands →

Bash is the shell, or command language interpreter, for the Linux operating system. The name is an acronym for the Bourne-Again SHell, a pun on Stephen Bourne, the author of the direct ancestor of the current Unix shell sh, which appeared in the Seventh Edition Bell Labs Research version of Unix Bash Reference Manual^[1].

Contents

Introduction to BASH

The improvements offered by BASH include:
Bash v4.0 Features

Authors

Download Bash Shell

External links

References

Introduction to BASH

- Developed by GNU project.
- The default Linux shell.
- Backward-compatible with the original sh UNIX shell.
- Bash is largely compatible with sh and incorporates useful features from the Korn shell ksh and the C shell csh.
- Bash is the default shell for Linux. However, it does run on every version of Unix and a few other operating systems such as ms-dos, os/2, and Windows platforms.

Quoting from the official Bash home page:

Bash is the shell, or command language interpreter, that will appear in the GNU operating system. It is intended to conform to the IEEE POSIX P1003.2/ISO 9945.2 Shell and Tools standard. It offers functional improvements over sh for both programming and interactive use. In addition, most sh scripts can be run by Bash without modification.

The improvements offered by BASH include:

The Bash syntax is an improved version of the Bourne shell syntax. In most cases Bourne shell scripts can be executed by Bash without any problems.

- Command line editing.
- Command line completion.
- Unlimited size command history.
- Prompt control.
- Indexed arrays of unlimited size (Arrays).
- Integer arithmetic in any base from two to sixty-four.
- Bash startup files - You can run bash as an interactive login shell, or interactive non-login shell. See Bash startup files for more information.
- Bash conditional expressions: Used in composing various expressions for the test builtin or [[or [commands.
- The Directory Stack - History of visited directories.
- The Restricted Shell: A more controlled mode of shell execution.

- Bash POSIX Mode: Making Bash behave more closely to what the POSIX standard specifies.

Bash v4.0 Features

- Usual run time environment: POSIX
- Command and file name completion - Bash can automatically fill in partially typed commands or arguments to the commands such as file name, hostname and much more.
- Arithmetic support:
 - Integer arithmetic supported.
 - Floating point arithmetic is not supported.
 - Exponential notation is limited via printf builtin.
 - Date and time arithmetic is not supported.
- Hash table: Bash uses a hash table to remember the full pathnames of executable files.
- Pattern Matching and regular expressions are supported.
- Globbering - For example, you can use *.conf to match all those conf files in /etc directory.
- Directory stack is supported via pushd and popd builtins.
- Command history and History completion fully supported by Bash.
- Custom command prompt - Allows you to change the default prompt.

Authors

- Brian J. Fox authored the GNU Bash shell, in 1987.
- Fox maintained Bash as the primary maintainer until 1993, at which point Chet Ramey took over.
- Chet Ramey is the current maintainer of the GNU Bourne Again Shell and GNU Readline.

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- Bash is the default shell under Linux. The current production versions are Bash 3.x and 4.x. You can grab it from the official website.

External links

- Bash home page
- Chet's home page

References

1. Bash Reference Manual.