

Metacharacters are symbols with special meanings for Bash and other shells. They aren't interpreted literally by the shell, but change the way the shell processes input and output.

Metacharacters and control operators

~	Tilde	Home directory
\$	Dollar sign	Denote a variable (as in \$HOME or \$USER)
&	Ampersand	Run a command in the background
;	Semi-colon	Command termination
&&	Double ampersand	Continue to the next command upon success (AND)
	Double pipe	Continue to the next command upon failure (OR)
	Pipe	Use output of the first command as input for the next
'	Single-quote	Treat all contents as literal
"	Quote	Treat spaces as literal, but expand variables
\	Backslash	Treat the next character as literal
()	Parentheses	Execute contents in a subshell
{ ; }	Braces	Execute in current shell (terminate with semi-colon)
[]	Brackets	Test expression
(())	Double parentheses	Evaluate contents as a mathematical expression
[[]]	Double brackets	Test expression, returning 0 or 1

Redirection

>	Overwrite existing content	<
>>	Append to existing content	<<

Wildcards

- ? Match exactly one of any character
- * Match zero or more of any character

Ranges

- [0-9] Any digit
- [a-z] Any lowercase alpha
- [A-Z] Any uppercase alpha
- [a-zA-Z] Any lowercase or uppercase alpha
- [abc] Only **a**, **b**, and **c**
- [!a-z] No lowercase alpha
- [!1-3] No **1**, **2**, or **3**, but all other digits
- [b-hot] Lowercase **b** through **h**, and the letter **o** and the letter **t**
- [A-M0-9] Uppercase alpha **A** through **M**, and any digit

Escape sequences

Escape sequences are interpreted as commands by the shell.

<code>\b</code>	Backspace	<code>echo a\$\b'b</code>
<code>\e</code>	Escape	<code>echo a\$\e'b</code>
<code>\f</code>	Form feed (like a non-returning newline)	<code>echo a\$\f' b</code>
<code>\n</code>	Newline	<code>echo a\$\n' b</code>
<code>\r</code>	Carriage return	<code>echo a\$\r' b</code>
<code>\t</code>	Horizontal tab	<code>echo a\$\t'b</code>
<code>\v</code>	Vertical tab	<code>echo a\$\v'b</code>
<code>\\</code>	Backslash	<code>echo a\$\\'b</code>
<code>\cx</code>	Control-X	<code>echo a\$\cH'b</code>
<code>\uHHHH</code>	Unicode character of hexadecimal value HHHH	<code>echo a\$\u0259'</code>
<code>\NNN</code>	8-bit character with octal value NNN	<code>echo a\$\451'</code>