

Username: Pralay Patoria **Book:** The C++ Standard Library: A Tutorial and Reference, Second Edition. No part of any chapter or book may be reproduced or transmitted in any form by any means without the prior written permission for reprints and excerpts from the publisher of the book or chapter. Redistribution or other use that violates the fair use privilege under U.S. copyright laws (see 17 USC107) or that otherwise violates these Terms of Service is strictly prohibited. Violators will be prosecuted to the full extent of U.S. Federal and Massachusetts laws.

14.9. Other Grammars

Beside the default ECMAScript grammar, the C++ standard library provides support for five other grammars, which you can specify by using the corresponding regex constants (see Section 14.6, page 732). So, you can choose from the following:

- `ECMAScript` : the default ECMAScript grammar
- `basic` : the basic regular expression (BRE) grammar of POSIX
- `extended` : the extended regular expression (ERE) grammar of POSIX
- `awk` : the grammar of the UNIX tool `awk`
- `grep` : the grammar of the UNIX tool `grep`
- `egrep` : the grammar of the UNIX tool `egrep`

Table 14.5 lists the major differences among those grammars. As you can see, the ECMAScript grammar is by far the most powerful one. The only feature it doesn't support is the use of newline characters to separate multiple patterns with "or," as `grep` and `egrep` provide, and the ability of `awk` to specify octal escape sequences.

Table 14.5. Regex Grammar Differences

Feature	ECMA-Script	basic	extended	awk	grep	egrep
Characters for grouping	()	\(\)	()	()	\(\)	()
Characters for repetitions	{ }	\{ \}	{ }	{ }	\{ \}	{ }
? means “zero or one”	Yes	-	Yes	Yes	-	Yes
+ means “at least one”	Yes	-	Yes	Yes	-	Yes
means “or”	Yes	-	Yes	Yes	-	Yes
\n separates alternative patterns	-	-	-	-	Yes	Yes
\n refers to group <i>n</i>	Yes	Yes	-	-	Yes	-
Word boundaries (\b and \B)	Yes	-	-	-	-	-
Hex and Unicode escape sequ.	Yes	-	-	-	-	-
Character class escape sequences	Yes	-	-	-	-	-
\n, \t, \f, \r, \v	Yes	-	-	Yes	-	-
\a (alert) and \b (backspace)	-	-	-	Yes	-	-
\ooo for octal values	-	-	-	Yes	-	-