NAME

rcsfile − format of RCS file

DESCRIPTION

An RCS file's contents are described by the grammar below.

The text is free format: space, backspace, tab, newline, vertical tab, form feed, and carriage return (collectively, *white space*) have no significance except in strings. However, white space cannot appear within an id, num, or sym, and an RCS file must end with a newline.

Strings are enclosed by @. If a string contains a @, it must be doubled; otherwise, strings can contain arbitrary binary data.

The meta syntax uses the following conventions: '|' (bar) separates alternatives; '{' and '}' enclose optional phrases; '{' and '}*' enclose phrases that can be repeated zero or more times; '{' and '}+' enclose phrases that must appear at least once and can be repeated; Terminal symbols are in **boldface**; nonterminal symbols are in *italics*.

rcstext ::= *admin* {*delta*}* *desc* {*deltatext*}*

admin ::= **head** {*num*}**;**
{ **branch** {*num*}**;** }
access {*id*}*;
symbols {*sym* **:** *num*}*;
locks {*id* **:** *num*}*; {**strict** **;**}
{ **comment** {*string*}**;** }
{ **expand** {*string*}**;** }
{ *newphrase* }*

delta ::= *num*
date *num*;
author *id*;
state {*id*}**;**
branches {*num*}*;
next {*num*}**;**
{ *newphrase* }*

desc ::= **desc** *string*

deltatext ::= *num*
log *string*
{ *newphrase* }*
text *string*

num ::= {*digit* | **.**}+

digit ::= **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9**

id ::= {*num*} *idchar* {*idchar* | *num*}*

sym ::= {*digit*}* *idchar* {*idchar* | *digit*}*

idchar ::= any visible graphic character except *special*

special ::= **$** | **,** | **.** | **:** | **;** | @

string ::= @{any character, with @ doubled}*@

newphrase ::= *id word** **;**

word ::= *id* | *num* | *string* | **:**

Identifiers are case sensitive. Keywords are in lower case only. The sets of keywords and identifiers can overlap. In most environments RCS uses the ISO 8859/1 encoding: visible graphic characters are codes 041−176 and 240−377, and white space characters are codes 010−015 and 040.

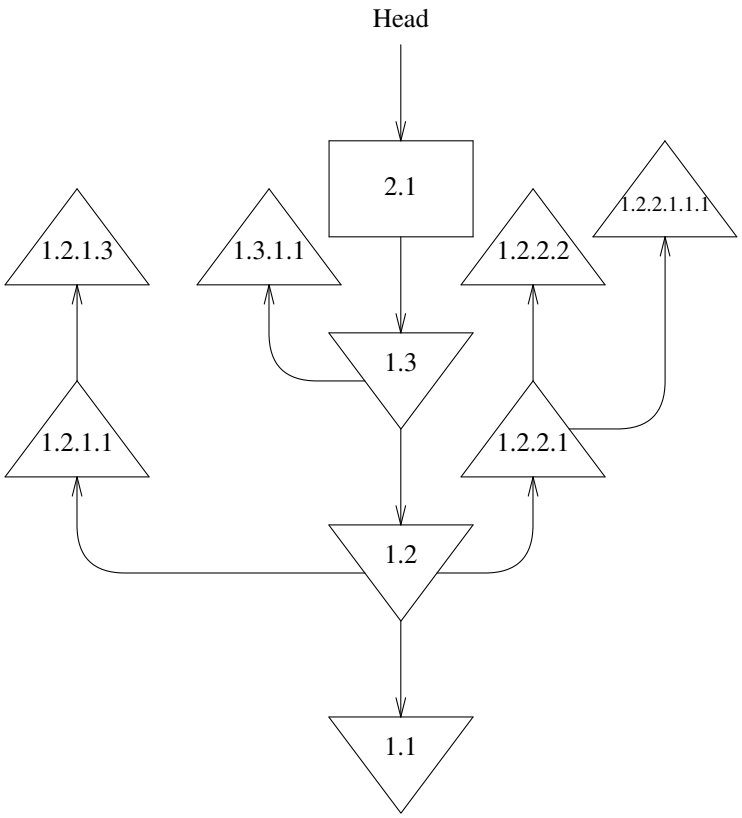
Dates, which appear after the **date** keyword, are of the form *Y.mm.dd.hh.mm.ss*, where *Y* is the year, *mm* the month (01-12), *dd* the day (00-31), *hh* the hour (00-23), *mm* the minute (00-59), and *ss* the second (00-60). *Y* contains just the last two digits of the year for years from 1900 through 1999, and all the digits of years thereafter. Dates use the Gregorian calendar; times use UTC.

The *newphrase* productions in the grammar are reserved for future extensions to the format of RCS files. No *newphrase* will begin with any keyword already in use.

The *delta* nodes form a tree. All nodes whose numbers consist of a single pair (e.g., 2.3, 2.1, 1.3, etc.) are on the trunk, and are linked through the **next** field in order of decreasing numbers. The **head** field in the *admin* node points to the head of that sequence (i.e., contains the highest pair). The **branch** node in the admin node indicates the default branch (or revision) for most RCS operations. If empty, the default branch is the highest branch on the trunk.

All *delta* nodes whose numbers consist of $2n$ fields ($n \geq 2$) (e.g., 3.1.1.1, 2.1.2.2, etc.) are linked as follows. All nodes whose first $2n-1$ number fields are identical are linked through the **next** field in order of increasing numbers. For each such sequence, the *delta* node whose number is identical to the first $2n-2$ number fields of the deltas on that sequence is called the branchpoint. The **branches** field of a node contains a list of the numbers of the first nodes of all sequences for which it is a branchpoint. This list is ordered in increasing numbers.

The following diagram shows an example of an RCS file's organization.



IDENTIFICATION

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SEE ALSO

rcsintro(1), ci(1), co(1), ident(1), rcs(1), rcsclean(1), rcsdiff(1), rcsmerge(1), rlog(1)

Walter F. Tichy, RCS—A System for Version Control, *Software—Practice & Experience* **15**, 7 (July 1985), 637-654.