

To: MTB Distribution
From: T. Casey
Date: February 12, 1974
Subject: Modifications to list, listnames, and listtotals commands.

The proposed modifications are, with one exception, designed to decrease the amount of output produced while still providing the user with the desired information. New control arguments are provided, to allow more exact specification of the output wanted, and the messages printed when entries are not found have been reorganized to be briefer and more meaningful.

Most of the features described have been coded, and used by the author and others, for several months. Some additional improvements, which would require hardcore changes (to hcs_\$star_list) are mentioned briefly, and will be the subject of a future MTB. It is proposed that the changes described here be installed before any work on those improvements is begun.

New Control Arguments

-primary, -pri

Print only the primary name of each entry. For multiply-named entries, the total number of names will be shown in parentheses after the primary name (on the same line).

If starnames are given on the command line, the name printed might not be the primary name; it will be the first name on the entry that matches a starname.

-brief, -bf

Do not print the heading line(s). For situations where this would cause nothing to be printed (e.g. the lt command, or when entries are not found), a brief (one line) summary will be printed.

-linkshort, -lks

Print link pathnames starting two spaces after the entry name, instead of starting in column 34.

The lining up of link pathnames in column 34 (allowing for the longest possible (32 character) entry name) is appropriate on wide platten terminals, or when the output is directed to a file for dprinting. However, in many cases, the user is more

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Interested in the information than in its format. On many terminals the spacing is time consuming, and the link pathnames must be continued on the following line anyway, resulting in harder-to-read output than -lks will produce.

-name, -nm

Sort entries by entryname (within each entry type) before printing. For multiply-named entries, the primary name (or first name that matches a starname) will be used in the sort. The names will be sorted as ascii strings, with no special attention being given to individual components of the names. If either of the date arguments (-dtm or -dtu) is given together with -nm, the specified date will be printed, while the entries will be sorted by name.

New not-found Messages

The message "** not found" which is currently printed on error_output_ when no starnames are given and no entries of the specified type are found, will no longer be printed.

The following new messages have been added, and will be printed on user_output_, under the circumstances described below:

```
Directory empty: <pathname>
Files = 0.
Branches = 0.
```

If a specified directory contains no entries of any type, then no matter what entry types or starnames were given on the command line, the message:

```
Directory empty: <pathname>
```

will be printed, and then processing will continue with any other directories specified.

If a directory is not empty, then for any starnames given on the command line for which no matching entries of any type are found, the message:

```
<starname> not found.
```

will be printed on error_output_, and then processing will continue with any other starnames specified. If no starnames are given, "**" will be used by default, and all entries, of all types, will match it.

For each entry type given on the command line, if matching entries of that type are found in the directory, they will be listed; otherwise, the message:

<entry type> = 0.

will be printed. The messages:

Files = 0.
Branches = 0.

will be printed instead of several messages naming the entry types that fall in those categories, if -files or -branch is specified. However, if entry types are given separately (e.g., -sm -msf) then separate messages will be printed for each type. The default, when no entry types are given on the command line, is -files. Thus, the only case where some entries will be listed and the "<entry type> = 0" message will also be printed is when the user has separately specified more than one entry type, and has NOT also specified -brief (see new control arguments, above). However, -lks may be used after -all to shorten the output lines, without causing unwanted "Links = 0" messages to appear.

With this new handling of the not found situation, the message

<starname> not found.

can always be taken as a positive indication that no entries of any type match the starname, while the message

<entry type> = 0.

can always be taken as a positive indication that matching entries do exist in the directory, but they are not of the types specified to be listed. (In the installed list command, this is sometimes, but not always, true, which is confusing to users.)

Other Miscellaneous Changes

Presently, when several directories are given on the same command line, the default starname of "*" will only be applied to the last directory specified (if it has no starnames associated with it). Any other directories for which no starnames are specified will be ignored. This will be changed so that the default starname will be used for all directories for which no starnames are specified.

If several directories are given on the command line, the not found message will include the directory in which there were no matching entries:

<starname> not found in <pathname>.

All the code dealing with append permission will be deleted, and the character position formerly reserved for the "a" will be used for the third digit of the record count, thus preserving the alignment of the names.

Future Improvements

There are two deficiencies in the present list command that can not be remedied efficiently using the current hcs_\$star_list:

If more than one starname is specified, any entry that matches more than one of the starnames will be listed (and counted in the totals) more than once. This is true whether the multiple matching is caused by multiple names on the entry, or a single name that happens to match more than one of the starnames.

When starnames are specified, multiply-named entries have only those of their names that match a starname listed, and no indication given that there are any additional names on the entry. If -primary is specified, the count of names on a multiply named entry includes only the names that matched a starname. This can be confusing to users.

A new hardcore interface, analogous to hcs_\$star_list, but designed to allow efficient solution of these two problems, and to increase the efficiency of the list command in several ways, will be proposed in a future MTB. The author prefers not to get into that area now. Comments and suggestions pertaining to the changes being made now, or points that may have been overlooked, are welcome, and may be sent to Casey.Multics via the mail command, or to CISL 575 Tech Square via IPC Courier. A design review meeting will be scheduled if there is some strong interest expressed in having one.