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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'alphasort.3' command

\$ man alphasort.3

SCANDIR(3) Linux Programmer's Manual SCANDIR(3)

NAME

scandir, scandirat, alphasort, versionsort - scan a directory for matching entries

SYNOPSIS

```
#include <dirent.h>

int scandir(const char *dirp, struct dirent ***namelist,
            int (*filter)(const struct dirent *),
            int (*compar)(const struct dirent **, const struct dirent **));

int alphasort(const struct dirent **a, const struct dirent **b);

int versionsort(const struct dirent **a, const struct dirent **b);

#include <fcntl.h>      /* Definition of AT_* constants */

#include <dirent.h>

int scandirat(int dirfd, const char *dirp,
              struct dirent ***namelist,
              int (*filter)(const struct dirent *),
              int (*compar)(const struct dirent **, const struct dirent **));
```

Feature Test Macro Requirements for glibc (see `feature_test_macros(7)`):

scandir(), alphasort():

/* Since glibc 2.10: */ _POSIX_C_SOURCE >= 200809L

|| /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE

versionsort(): _GNU_SOURCE

scandirat(): _GNU_SOURCE

DESCRIPTION

The scandir() function scans the directory dirp, calling filter() on each directory entry. Entries for which filter() returns nonzero are stored in strings allocated via malloc(3), sorted using qsort(3) with the comparison function compar(), and collected in array namelist which is allocated via malloc(3). If filter is NULL, all entries are selected.

The alphasort() and versionsort() functions can be used as the comparison function compar(). The former sorts directory entries using strcoll(3), the latter using strverscmp(3) on the strings (*a)->d_name and (*b)->d_name.

scandirat()

The scandirat() function operates in exactly the same way as scandir(), except for the differences described here.

If the pathname given in dirp is relative, then it is interpreted relative to the directory referred to by the file descriptor dirfd (rather than relative to the current working directory of the calling process, as is done by scandir() for a relative pathname).

If dirp is relative and dirfd is the special value AT_FDCWD, then dirp is interpreted relative to the current working directory of the calling process (like scandir()).

If dirp is absolute, then dirfd is ignored.

See openat(2) for an explanation of the need for scandirat().

RETURN VALUE

The scandir() function returns the number of directory entries selected. On error, -1 is returned, with errno set to indicate the cause of the error.

The alphasort() and versionsort() functions return an integer less than, equal to, or greater than zero if the first argument is considered to be respectively less than, equal to, or greater than the second.

ERRORS

ENOENT The path in dirp does not exist.

ENOMEM Insufficient memory to complete the operation.

ENOTDIR

The path in dirp is not a directory.

The following additional errors can occur for scandirat():

EBADF dirfd is not a valid file descriptor.

ENOTDIR

dirp is a relative path and dirfd is a file descriptor referring to a file other than a directory.

VERSIONS

`versionsort()` was added to glibc in version 2.1.

`scandirat()` was added to glibc in version 2.15.

ATTRIBUTES

For an explanation of the terms used in this section, see at?

tributes(7).

?Interface ? Attribute ? Value ?

?scandir(), scandirat() ? Thread safety ? MT-Safe ?

?alphasort(), versionsort() ? Thread safety ? MT-Safe locale ?

CONFORMING TO

`alphasort()`, `scandir()`: 4.3BSD, POSIX.1-2008.

`versionsort()` and `scandirat()` are GNU extensions.

NOTES

Since glibc 2.1, `alphasort()` calls `strcoll(3)`; earlier it used `str?cmp(3)`.

Before glibc 2.10, the two arguments of `alphasort()` and `versionsort()` were typed as `const void *`. When `alphasort()` was standardized in POSIX.1-2008, the argument type was specified as the type-safe `const struct dirent **`, and glibc 2.10 changed the definition of `alphasort()` (and the nonstandard `versionsort()`) to match the standard.

EXAMPLES

The program below prints a list of the files in the current directory in reverse order.

Program source

```
#define _DEFAULT_SOURCE

#include <dirent.h>
#include <stdio.h>
#include <stdlib.h>

int
main(void)
{
    struct dirent **namelist;
    int n;
    n = scandir(".", &namelist, NULL, alphasort);
    if (n == -1) {
        perror("scandir");
        exit(EXIT_FAILURE);
    }
    while (n--) {
        printf("%s\n", namelist[n]->d_name);
        free(namelist[n]);
    }
    free(namelist);
    exit(EXIT_SUCCESS);
}
```

SEE ALSO

`closedir(3)`, `fnmatch(3)`, `opendir(3)`, `readdir(3)`, `rewinddir(3)`,
`seekdir(3)`, `strcmp(3)`, `strcoll(3)`, `strverscmp(3)`, `telldir(3)`

COLOPHON

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