

NAME

dwarf_new_expr - create a location expression descriptor

LIBRARY

DWARF Access Library (libdwarf, -ldwarf)

SYNOPSIS

```
#include <libdwarf.h>
```

```
Dwarf_P_Expr
```

```
dwarf_new_expr(Dwarf_P_Debug dbg, Dwarf_Error *err);
```

DESCRIPTION

Function **dwarf_new_expr()** allocates a DWARF location expression descriptor used to build up a location expression stream.

The application can use the functions **dwarf_add_expr_gen(3)** and **dwarf_add_expr_addr_b(3)** to add location expression operators to the created descriptor. When done, the application can call the function **dwarf_expr_into_block(3)** to retrieve the generated byte stream for the location expression, or call the function **dwarf_add_AT_location_expr(3)** to create an attribute with the location expression stream as its value.

Argument *dbg* should reference a DWARF producer instance allocated using **dwarf_producer_init(3)** or **dwarf_producer_init_b(3)**.

If argument *err* is not NULL, it will be used to store error information in case of an error.

RETURN VALUES

On success, function **dwarf_new_expr()** returns the created location expression descriptor. In case of an error, function **dwarf_new_expr()** returns DW_DLV_BADADDR and sets the argument *err*.

EXAMPLES

To create a location expression descriptor, add location expression operators to it and to retrieve the generated byte stream, use:

```
Dwarf_P_Debug dbg;
```

```
Dwarf_Error de;
```

```
Dwarf_P_Expr pe;
```

```
Dwarf_Addr buf;
```

```
Dwarf_Unsigned len;
```

```
/* ...Assume that 'dbg' refers to a DWARF producer instance... */

if ((pe = dwarf_new_expr(dbg, &de)) == DW_DLV_BADADDR) {
    warnx("dwarf_new_expr failed: %s", dwarf_errmsg(-1));
    return;
}

if (dwarf_add_expr_gen(pe, DW_OP_regx, 55, 0, &de) ==
    DW_DLV_NOCOUNT) {
    warnx("dwarf_add_expr_gen failed: %s", dwarf_errmsg(-1));
    return;
}

if ((buf = dwarf_expr_into_block(pe, &len, &de)) ==
    DW_DLV_BADADDR) {
    warnx("dwarf_expr_into_block failed: %s",
        dwarf_errmsg(-1));
    return;
}
```

ERRORS

Function **dwarf_new_expr()** can fail with:

[DW_DLE_ARGUMENT] Argument *dbg* was NULL.

[DW_DLE_MEMORY] An out of memory condition was encountered during the execution of the function.

SEE ALSO

dwarf(3), dwarf_add_AT_location_expr(3), dwarf_add_expr_addr(3), dwarf_add_expr_addr_b(3), dwarf_add_expr_gen(3), dwarf_expr_current_offset(3), dwarf_expr_into_block(3), dwarf_producer_init(3), dwarf_producer_init_b(3)