

**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)