

| Offset | Size | Name | Description |
|-----------|-------|--------------|--|
| 00h | WORD | ne_magic | Signature word NEMAGIC |
| On-disk | | | |
| 02h | BYTE | ne_ver | Version number of the linker |
| 03h | BYTE | ne_rev | Revision number of the linker |
| In-memory | | | |
| 02h | WORD | count | Usage count (ne_ver/ne_rev on disk) |
| 04h | WORD | ne_enttab | Entry Table file offset, relative to the beginning of the segmented EXE header |
| On-disk | | | |
| 06h | WORD | ne_cbenttab | Number of bytes in the entry table |
| In-memory | | | |
| 06h | WORD | next | Selector to next module |
| On-disk | | | |
| 08h | DWORD | ne_crc | 32-bit CRC of entire contents of file. These words are taken as 00 during the calculation |
| In-memory | | | |
| 08h | WORD | dgroup_entry | Near ptr to segment entry for DGROUP |
| 0Ah | WORD | fileinfo | Near ptr to file info (OFSTRUCT) |
| 0Ch | WORD | ne_flags | Flag word |
| 0Eh | WORD | ne_autodata | Segment number of automatic data segment. This value is set to zero if SINGLEDATA and MULTIPLEDATA flag bits are clear, NOAUTODATA is indicated in the flags word. A Segment number is an index into the module's segment table. The first entry in the segment table is segment number 1 |
| 10h | WORD | ne_heap | Initial size, in bytes, of dynamic heap added to the data segment. This value is zero if no initial local heap is allocated |
| 12h | WORD | ne_stack | Initial size, in bytes, of stack added to the data segment. This value is zero to indicate no initial stack allocation, or when SS is not equal to DS |
| 14h | DWORD | ne_csip | Segment number:offset of CS:IP |
| 18h | DWORD | ne_sssp | Segment number:offset of SS:SP If SS equals the automatic data segment and SP equals zero, the stack pointer is set to the top of the automatic data segment just below the additional heap area. +-----+ ! additional dynamic heap ! +-----+ ← SP ! additional stack ! +-----+ ! loaded auto data segment !% +-----+ ← DS, SS |
| 1Ch | WORD | ne_cseg | Number of entries in the Segment Table |
| 1Eh | WORD | ne_cmod | Number of entries in the Module Reference Table |
| 20h | WORD | ne_cbnrestab | Number of bytes in the Non-Resident Name Table |
| 22h | WORD | ne_segtab | Segment Table file offset, relative to the beginning of the segmented EXE header |
| 24h | WORD | ne_rsrctab | Resource Table file offset, relative to the beginning of the segmented EXE header |

| Offset | Size | Name | Description |
|--------|---------|----------------|---|
| 26h | WORD | ne_restab | Resident Name Table file offset, relative to the beginning of the segmented EXE header |
| 28h | WORD | ne_modtab | Module Reference Table file offset, relative to the beginning of the segmented EXE header |
| 2Ah | WORD | ne_imptab | Imported Names Table file offset, relative to the beginning of the segmented EXE header |
| 2Ch | DWORD | ne_nrestab | Non-Resident Name Table offset, relative to the beginning of the file |
| 30h | WORD | ne_cmovent | Number of movable entries in the Entry Table |
| 32h | WORD | ne_align | Logical sector alignment shift count, log(base 2) of the segment sector size (default 9) |
| 34h | WORD | ne_cres | Number of resource entries |
| 36h | BYTE | ne_exetyp | Executable type, used by loader. 02h = WINDOWS |
| 37h | BYTE | ne_flagsothers | Operating system flags |
| 38h | WORD | ??? | offset to return thunks or start of gangload area |
| 3Ah | WORD | ??? | offset to segment reference thunks or length of gangload area |
| 3Ch | WORD | ??? | minimum code swap area size |
| 3Eh | 2 BYTES | ??? | expected Windows version (minor version first) |

On-disk segment entry

| Offset | Size | Name | Description |
|--------|------|-------------|--|
| 00h | WORD | ns_sector | Logical-sector offset (n byte) to the contents of the segment data, relative to the beginning of the file. Zero means no file data |
| 02h | WORD | ns_cbseg | Length of the segment in the file, in bytes. Zero means 64K |
| 04h | WORD | ns_flags | Flag word |
| 06h | WORD | ns_minalloc | Minimum allocation size of the segment, in bytes. Total size of the segment. Zero means 64K |

In-memory segment entry

| Offset | Size | Name | Description |
|--------|------|--------------|--|
| 00h | WORD | ns1_sector | Logical-sector offset (n byte) to the contents of the segment data, relative to the beginning of the file. Zero means no file data |
| 02h | WORD | ns1_cbseg | Length of the segment in the file, in bytes. Zero means 64K |
| 04h | WORD | ns1_flags | Flag word |
| 06h | WORD | ns1_minalloc | Minimum allocation size of the segment, in bytes. Total size of the segment. Zero means 64K |
| 08h | WORD | ns1_handle | Selector or handle (selector - 1) of segment in memory |

struct new_segdata {

```

union {
    struct {
        WORD    ns_niter;
        WORD    ns_nbytes;
        char    ns_iterdata;
    } ns_iter;
    struct {

```

```

        char        ns_data;
    } ns_noniter;
} ns_union;

};

struct new_rlinfo {

WORD    nr_nreloc;

};

struct new_rlc {

char        nr_stype;
char        nr_flags;
WORD    nr_soff;
union {
    struct {
        char        nr_segno;
        char        nr_res;
        WORD    nr_entry;
    } nr_intref;
    struct {
        WORD    nr_mod;
        WORD    nr_proc;
    } nr_import;
    struct {
        WORD    nr_ostype;
        WORD    nr_osres;
    } nr_osfix;
} nr_union;

};

#define NR_STYPE(x) (x).nr_stype #define NR_FLAGS(x) (x).nr_flags #define NR_SOFF(x) (x).nr_soff
#define NR_SEGNO(x) (x).nr_union.nr_intref.nr_segno #define NR_RES(x) (x).nr_union.nr_intref.nr_res
#define NR_ENTRY(x) (x).nr_union.nr_intref.nr_entry #define NR_MOD(x)
(x).nr_union.nr_import.nr_mod #define NR_PROC(x) (x).nr_union.nr_import.nr_proc #define
NR_OSTYPE(x) (x).nr_union.nr_osfix.nr_ostype #define NR_OSRES(x) (x).nr_union.nr_osfix.nr_osres

#define NRSTYP 0x0f #define NRSBYT 0x00 #define NRSSEG 0x02 #define NRSPTR 0x03 #define
NRSOFF 0x05 #define NRPTR48 0x06 #define NROFF32 0x07 #define NRSOFF32 0x08

#define NRADD 0x04 #define NRRTYP 0x03 #define NRRINT 0x00 #define NRRORD 0x01 #define
NRRNAM 0x02 #define NRROSF 0x03 #define NRCHAIN 0x08

#if (EXE386 == 0)

#define RS_LEN(x) (x).rs_len #define RS_STRING(x) (x).rs_string #define RS_ALIGN(x) (x).rs_align

#define RT_ID(x) (x).rt_id #define RT_NRES(x) (x).rt_nres #define RT_PROC(x) (x).rt_proc

```

```
#define RN_OFFSET(x) (x).rn_offset #define RN_LENGTH(x) (x).rn_length #define RN_FLAGS(x)  
(x).rn_flags #define RN_ID(x) (x).rn_id #define RN_HANDLE(x) (x).rn_handle #define RN_USAGE(x)  
(x).rn_usage
```

```
#define RSORDID 0x8000
```

```
#define RNMOVE 0x0010 #define RNPURE 0x0020 #define RNPRELOAD 0x0040 #define RNDISCARD  
0xF000
```

```
#define NE_FFLAGS_LIBMODULE 0x8000
```

```
struct rsrc_string {
```

```
char    rs_len;  
char    rs_string[1];
```

```
};
```

```
struct rsrc_typeinfo {
```

```
WORD    rt_id;  
WORD    rt_nres;  
DWORD           rt_proc;
```

```
};
```

```
struct rsrc_nameinfo {
```

```
WORD    rn_offset;  
WORD    rn_length;  
WORD    rn_flags;  
WORD    rn_id;  
WORD    rn_handle;  
WORD    rn_usage;
```

```
};
```

```
struct new_rsrc {
```

```
WORD           rs_align;  
struct rsrc_typeinfo  rs_typeinfo;
```

```
};
```

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