```
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/*	actual or intended publication of such source code.	*/

#ifndef _LIBELF_H
#define _LIBELF_H

#ident	"@(#)sgs-inc:common/libelf.h	1.8.3.1"

#include <sys/types.h>
#include "sys/elf.h"


#undef _
#ifdef __STDC__
	typedef void		Elf_Void;
#	define _(a)		a
#else
	typedef char		Elf_Void;
#	define _(a)		()
#	ifndef _SIZE_T
#		define _SIZE_T
#		ifndef size_t
#			define size_t	unsigned int
#		endif
#	endif
#	undef const
#	define const
#endif


/*	commands
 */

typedef enum {
	ELF_C_NULL = 0,	/* must be first, 0 */
	ELF_C_READ,
	ELF_C_WRITE,
	ELF_C_IMPURE_WRITE,
	ELF_C_CLR,
	ELF_C_SET,
	ELF_C_FDDONE,
	ELF_C_FDREAD,
	ELF_C_RDWR,
	ELF_C_NUM	/* must be last */
} Elf_Cmd;


/*	flags
 */

#define ELF_F_DIRTY	0x1
#define ELF_F_LAYOUT	0x4


/*	file types
 */

typedef enum {
	ELF_K_NONE = 0,	/* must be first, 0 */
	ELF_K_AR,
	ELF_K_COFF,
	ELF_K_ELF,
	ELF_K_NUM	/* must be last */
} Elf_Kind;


/*	translation types
 */

typedef enum {
	ELF_T_BYTE = 0,	/* must be first, 0 */
	ELF_T_ADDR,
```

```
/* Interface for libelf.
   Copyright (C) 1998, 1999, 2000, 2002, 2004 Red Hat, Inc.

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   it under the terms of the GNU General Public License as published by
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   along with this program; if not, write to the Free Software Foundation,
   Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.  */

#ifndef _LIBELF_H
#define _LIBELF_H 1

#include <sys/types.h>

/* Get the ELF types.  */
#include <elf.h>


/* Known translation types.  */
typedef enum
{
  ELF_T_BYTE,                   /* unsigned char */
  ELF_T_ADDR,                   /* Elf32_Addr, Elf64_Addr, ... */
  ELF_T_DYN,                    /* Dynamic section record.  */
  ELF_T_EHDR,                   /* ELF header.  */
  ELF_T_HALF,                   /* Elf32_Half, Elf64_Half, ... */
  ELF_T_OFF,                    /* Elf32_Off, Elf64_Off, ... */
  ELF_T_PHDR,                   /* Program header.  */
  ELF_T_RELA,                   /* Relocation entry with addend.  */
  ELF_T_REL,                    /* Relocation entry.  */
  ELF_T_SHDR,                   /* Section header.  */
  ELF_T_SWORD,                  /* Elf32_Sword, Elf64_Sword, ... */
  ELF_T_SYM,                    /* Symbol record.  */
  ELF_T_WORD,                   /* Elf32_Word, Elf64_Word, ... */
  ELF_T_XWORD,                  /* Elf32_Xword, Elf64_Xword, ... */
  ELF_T_SXWORD,                 /* Elf32_Sxword, Elf64_Sxword, ... */
  ELF_T_VDEF,                   /* Elf32_Verdef, Elf64_Verdef, ... */
  ELF_T_VDAUX,                  /* Elf32_Verdaux, Elf64_Verdaux, ... */
  ELF_T_VNEED,                  /* Elf32_Verneed, Elf64_Verneed, ... */
  ELF_T_VNAUX,                  /* Elf32_Vernaux, Elf64_Vernaux, ... */
  ELF_T_NHDR,                   /* Elf32_Nhdr, Elf64_Nhdr, ... */
  ELF_T_SYMINFO,        /* Elf32_Syminfo, Elf64_Syminfo, ... */
  ELF_T_MOVE,            /* Elf32_Move, Elf64_Move, ... */
  ELF_T_LIB,            /* Elf32_Lib, Elf64_Lib, ... */
  /* Keep this the last entry.  */
  ELF_T_NUM
} Elf_Type;

/* Descriptor for data to be converted to or from memory format.  */
typedef struct
{
  void *d_buf;            /* Pointer to the actual data.  */
  Elf_Type d_type;        /* Type of this piece of data.  */
  unsigned int d_version;    /* ELF version.  */
  size_t d_size;        /* Size in bytes.  */
  off_t d_off;            /* Offset into section.  */
  size_t d_align;        /* Alignment in section.  */
} Elf_Data;


/* Commands for `...'.  */
typedef enum
{
  ELF_C_NULL,            /* Nothing, terminate, or compute only.  */
  ELF_C_READ,            /* Read .. */
  ELF_C_RDWR,            /* Read and write .. */
  ELF_C_WRITE,            /* Write .. */
  ELF_C_CLR,            /* Clear flag.  */
  ELF_C_SET,            /* Set flag.  */
  ELF_C_FDDONE,            /* Signal that file descriptor will not be
                 used anymore.  */
```

/Users/Shared/FileFormatter/libelf/libelf-header/src2/SVR4.2-ES-MP-LIBELF.H

```
 79:     ELF_T_DYN,
 80:     ELF_T_EHDR,
 81:     ELF_T_HALF,
 82:     ELF_T_OFF,
 83:     ELF_T_PHDR,
 84:     ELF_T_RELA,
 85:     ELF_T_REL,
 86:     ELF_T_SHDR,
 87:     ELF_T_SWORD,
 88:     ELF_T_SYM,
 89:     ELF_T_WORD,
 90:     ELF_T_NUM    /* must be last */
 91: } Elf_Type;
 92:
 93:
 94: typedef struct Elf    Elf;
 95: typedef struct Elf_Scn    Elf_Scn;
 96:
 97:
 98: /*    archive member header
 99:  */
100:
101: typedef struct {
102:     char        *ar_name;
103:     time_t        ar_date;
104:     long         ar_uid;
105:     long         ar_gid;
106:     unsigned long    ar_mode;
107:     off_t        ar_size;
108:     char         *ar_rawname;
109: } Elf_Arhdr;
110:
111:
112: /*    archive symbol table
113:  */
114:
115: typedef struct {
116:     char        *as_name;
117:     size_t        as_off;
118:     unsigned long    as_hash;
119: } Elf_Arsym;
120:
121:
122: /*    data descriptor
123:  */
124:
125: typedef struct {
126:     Elf_Void    *d_buf;
127:     Elf_Type    d_type;
128:     size_t        d_size;
129:     off_t        d_off;        /* offset into section */
130:     size_t        d_align;    /* alignment in section */
131:     unsigned    d_version;    /* elf version */
132: } Elf_Data;
133:
134:
135: /*    function declarations
136:  */
137:
138: Elf        *elf_begin    _((int, Elf_Cmd, Elf *));
139: int        elf_cntl    _((Elf *, Elf_Cmd));
140: int        elf_end        _((Elf *));
141: const char    *elf_errmsg    _((int));
142: int        elf_errno    _((void));
143: void        elf_fill    _((int));
144: unsigned    elf_flagdata    _((Elf_Data *, Elf_Cmd, unsigned));
145: unsigned    elf_flagehdr    _((Elf *, Elf_Cmd, unsigned));
146: unsigned    elf_flagelf    _((Elf *, Elf_Cmd, unsigned));
147: unsigned    elf_flagphdr    _((Elf *, Elf_Cmd, unsigned));
148: unsigned    elf_flagscn    _((Elf_Scn *, Elf_Cmd, unsigned));
149: unsigned    elf_flagshdr    _((Elf_Scn *, Elf_Cmd, unsigned));
150: size_t        elf32_fsize    _((Elf_Type, size_t, unsigned));
151: Elf_Arhdr    *elf_getarhdr    _((Elf *));
152: Elf_Arsym    *elf_getarsym    _((Elf *, size_t *));
153: off_t        elf_getbase    _((Elf *));
154: Elf_Data    *elf_getdata    _((Elf_Scn *, Elf_Data *));
155: Elf32_Ehdr    *elf32_getehdr    _((Elf *));
156: char        *elf_getident    _((Elf *, size_t *));
```

5:327 5:314 5:320 4:267 4:277 4:273 4:253 4:238 4:286 4:235 4:241 4:247 4:244

/Users/Shared/FileFormatter/libelf/libelf-header/src2/redhat-elfutils0.97-libelf.h

```
 79:   ELF_C_FDREAD,            /* Read rest of data so that file descriptor
 80:                  is not used anymore.  */
 81:   /* The following are extensions.  */
 82:   ELF_C_READ_MMAP,        /* Read, but mmap the file if possible.  */
 83:   ELF_C_RDWR_MMAP,        /* Read and write, with mmap.  */
 84:   ELF_C_WRITE_MMAP,        /* Write, with mmap.  */
 85:   ELF_C_READ_MMAP_PRIVATE,    /* Read, but memory is writable, results are
 86:                  not written to the file.  */
 87:   ELF_C_EMPTY,            /* Copy basic file data but not the content. */
 88:   /* Keep this the last entry.  */
 89:   ELF_C_NUM
 90: } Elf_Cmd;
 91:
 92:
 93: /* Flags for the ELF structures.  */
 94: enum
 95: {
 96:   ELF_F_DIRTY = 0x1,
 97: #define ELF_F_DIRTY        ELF_F_DIRTY
 98:   ELF_F_LAYOUT = 0x4,
 99: #define ELF_F_LAYOUT        ELF_F_LAYOUT
100:   ELF_F_PERMISSIVE = 0x8
101: #define ELF_F_PERMISSIVE    ELF_F_PERMISSIVE
102: };
103:
104:
105: /* Identification values for recognized object files.  */
106: typedef enum
107: {
108:   ELF_K_NONE,            /* Unknown.  */
109:   ELF_K_AR,            /* Archive.  */
110:   ELF_K_COFF,            /* Stupid old COFF.  */
111:   ELF_K_ELF,            /* ELF file.  */
112:   /* Keep this the last entry.  */
113:   ELF_K_NUM
114: } Elf_Kind;
115:
116:
117: /* Archive member header.  */
118: typedef struct
119: {
120:   char *ar_name;        /* Name of archive member.  */
121:   time_t ar_date;        /* File date.  */
122:   uid_t ar_uid;            /* User ID.  */
123:   gid_t ar_gid;            /* Group ID.  */
124:   mode_t ar_mode;        /* File mode.  */
125:   off_t ar_size;        /* File size.  */
126:   char *ar_rawname;        /* Original name of archive member.  */
127: } Elf_Arhdr;
128:
129:
130: /* Archive symbol table entry.  */
131: typedef struct
132: {
133:   char *as_name;        /* Symbol name.  */
134:   size_t as_off;        /* Offset for this file in the archive.  */
135:   unsigned long int as_hash;    /* Hash value of the name.  */
136: } Elf_Arsym;
137:
138:
139: /* Descriptor for the ELF file.  */
140: typedef struct Elf Elf;
141:
142: /* Descriptor for ELF file section.  */
143: typedef struct Elf_Scn Elf_Scn;
144:
145:
146: #ifdef __cplusplus
147: extern "C" {
148: #endif
149:
150: /* Return descriptor for ELF file to work according to CMD.  */
151: extern Elf *elf_begin (int __fildes, Elf_Cmd __cmd, Elf *__ref);
152:
153: /* Create a clone of an existing ELF descriptor.  */
154:   extern Elf *elf_clone (Elf *__elf, Elf_Cmd __cmd);
155:
156: /* Create descriptor for memory region.  */
```

(For readability, not all matches are indicated.)

```
157: Elf32_Phdr    *elf32_getphdr    _((Elf *));
158: Elf_Scn        *elf_getscn    _((Elf *elf, size_t));
159: Elf32_Shdr    *elf32_getshdr    _((Elf_Scn *));
160: unsigned long    elf_hash    _((const char *));
161: Elf_Kind    elf_kind    _((Elf *));
162: size_t        elf_ndxscn    _((Elf_Scn *));
163: Elf_Data    *elf_newdata    _((Elf_Scn *));
164: Elf32_Ehdr    *elf32_newehdr    _((Elf *));
165: Elf32_Phdr    *elf32_newphdr    _((Elf *, size_t));
166: Elf_Scn        *elf_newscn    _((Elf *));
167: Elf_Scn        *elf_nextscn    _((Elf *, Elf_Scn *));
168: Elf_Cmd        elf_next    _((Elf *));
169: size_t        elf_rand    _((Elf *, size_t));
170: Elf_Data    *elf_rawdata    _((Elf_Scn *, Elf_Data *));
171: char        *elf_rawfile    _((Elf *, size_t *));
172: char        *elf_strptr    _((Elf *, size_t, size_t));
173: off_t        elf_update    _((Elf *, Elf_Cmd));
174: unsigned    elf_version    _((unsigned));
175: Elf_Data    *elf32_xlatetof    _((Elf_Data *, const Elf_Data *, unsigned));
176: Elf_Data    *elf32_xlatetom    _((Elf_Data *, const Elf_Data *, unsigned));
177:
178: #undef    _
179:
180: #endif
```

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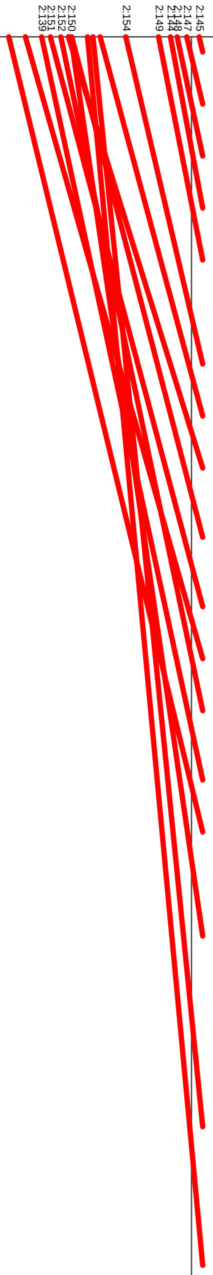
```
157: extern Elf *elf_memory (char *__image, size_t __size);
158:
159: /* Advance archive descriptor to next element.  */
160: extern Elf_Cmd elf_next (Elf *__elf);
161:
162: /* Free resources allocated for ELF.  */
163: extern int elf_end (Elf *__elf);
164:
165: /* Update ELF descriptor and write file to disk.  */
166: extern off_t elf_update (Elf *__elf, Elf_Cmd __cmd);
167:
168: /* Determine what kind of file is associated with ELF.  */
169: extern Elf_Kind elf_kind (Elf *__elf) __attribute__ ((__pure__));
170:
171: /* Get the base offset for an object file.  */
172: extern off_t elf_getbase (Elf *__elf);
173:
174:
175: /* Retrieve file identification data.  */
176: extern char *elf_getident (Elf *__elf, size_t *__ptr);
177:
178: /* Retrieve class-dependent object file header.  */
179: extern Elf32_Ehdr *elf32_getehdr (Elf *__elf);
180: /* Similar but this time the binary calls is ELFCLASS64.  */
181: extern Elf64_Ehdr *elf64_getehdr (Elf *__elf);
182:
183: /* Create ELF header if none exists.  */
184: extern Elf32_Ehdr *elf32_newehdr (Elf *__elf);
185: /* Similar but this time the binary calls is ELFCLASS64.  */
186: extern Elf64_Ehdr *elf64_newehdr (Elf *__elf);
187:
188: /* Retrieve class-dependent program header table.  */
189: extern Elf32_Phdr *elf32_getphdr (Elf *__elf);
190: /* Similar but this time the binary calls is ELFCLASS64.  */
191: extern Elf64_Phdr *elf64_getphdr (Elf *__elf);
192:
193: /* Create ELF program header.  */
194: extern Elf32_Phdr *elf32_newphdr (Elf *__elf, size_t __cnt);
195: /* Similar but this time the binary calls is ELFCLASS64.  */
196: extern Elf64_Phdr *elf64_newphdr (Elf *__elf, size_t __cnt);
197:
198:
199: /* Get section at INDEX.  */
200: extern Elf_Scn *elf_getscn (Elf *__elf, size_t __index);
201:
202: /* Get index of section.  */
203: extern size_t elf_ndxscn (Elf_Scn *__scn);
204:
205: /* Get section with next section index.  */
206: extern Elf_Scn *elf_nextscn (Elf *__elf, Elf_Scn *__scn);
207:
208: /* Create a new section and append it at the end of the table.  */
209: extern Elf_Scn *elf_newscn (Elf *__elf);
210:
211: /* Get the number of sections in the ELF file.  If the file uses more
212:    sections than can be represented in the e_shnum field of the ELF
213:    header the information from the sh_size field in the zeroth section
214:    header is used.  */
215: extern int elf_getshnum (Elf *__elf, size_t *__dst);
216:
217:
218: /* Get the section index of the section header string table in the ELF
219:    file.  If the index cannot be represented in the e_shnum field of
220:    the ELF header the information from the sh_link field in the zeroth
221:    section header is used.  */
222: extern int elf_getshstrndx (Elf *__elf, size_t *__dst);
223:
224:
225: /* Retrieve section header of ELFCLASS32 binary.  */
226: extern Elf32_Shdr *elf32_getshdr (Elf_Scn *__scn);
227: /* Similar for ELFCLASS64.  */
228: extern Elf64_Shdr *elf64_getshdr (Elf_Scn *__scn);
229:
230:
231: /* Set or clear flags for ELF file.  */
232: extern unsigned int elf_flagelf (Elf *__elf, Elf_Cmd __cmd,
233:                  unsigned int __flags);
234: /* Similarly for the ELF header.  */
```

(For readability, not all matches are indicated.)



```
235: extern unsigned int elf_flagehdr (Elf *__elf, Elf_Cmd __cmd,
236:                   unsigned int __flags);
237: /* Similarly for the ELF program header.  */
238: extern unsigned int elf_flagphdr (Elf *__elf, Elf_Cmd __cmd,
239:                   unsigned int __flags);
240: /* Similarly for the given ELF section.  */
241: extern unsigned int elf_flagscn (Elf_Scn *__scn, Elf_Cmd __cmd,
242:                  unsigned int __flags);
243: /* Similarly for the given ELF data.  */
244: extern unsigned int elf_flagdata (Elf_Data *__data, Elf_Cmd __cmd,
245:                   unsigned int __flags);
246: /* Similarly for the given ELF section header.  */
247: extern unsigned int elf_flagshdr (Elf_Scn *__scn, Elf_Cmd __cmd,
248:                   unsigned int __flags);
249:
250:
251: /* Get data from section while translating from file representation
252:    to memory representation.  */
253: extern Elf_Data *elf_getdata (Elf_Scn *__scn, Elf_Data *__data);
254:
255: /* Get uninterpreted section content.  */
256: extern Elf_Data *elf_rawdata (Elf_Scn *__scn, Elf_Data *__data);
257:
258: /* Create new data descriptor for section SCN.  */
259: extern Elf_Data *elf_newdata (Elf_Scn *__scn);
260:
261:
262: /* Return pointer to string at OFFSET in section INDEX.  */
263: extern char *elf_strptr (Elf *__elf, size_t __index, size_t __offset);
264:
265:
266: /* Return header of archive.  */
267: extern Elf_Arhdr *elf_getarhdr (Elf *__elf);
268:
269: /* Select archive element at OFFSET.  */
270: extern size_t elf_rand (Elf *__elf, size_t __offset);
271:
272: /* Get symbol table of archhive.  */
273: extern Elf_Arsym *elf_getarsym (Elf *__elf, size_t *__ptr);
274:
275:
276: /* Control ELF descriptor.  */
277: extern int elf_cntl (Elf *__elf, Elf_Cmd __cmd);
278:
279: /* Retrieve uninterpreted file contents.  */
280: extern char *elf_rawfile (Elf *__elf, size_t *__ptr);
281:
282:
283: /* Return size of array of COUNT elements of the type denoted by TYPE
284:    in the external representation.  The binary class is taken from ELF.
285:    The result is based on version VERSION of the ELF standard.  */
286: extern size_t elf32_fsize (Elf_Type __type, size_t __count,
287:                unsigned int __version)
288:        __attribute__ ((__const__));
289: /* Similar but this time the binary calls is ELFCLASS64.  */
290: extern size_t elf64_fsize (Elf_Type __type, size_t __count,
291:                unsigned int __version)
292:        __attribute__ ((__const__));
293:
294:
295: /* Convert data structure from the representation in the file represented
296:    by ELF to their memory representation.  */
297: extern Elf_Data *elf32_xlatetom (Elf_Data *__dest, const Elf_Data *__src,
298:                  unsigned int __encode);
299: /* Same for 64 bit class.  */
300: extern Elf_Data *elf64_xlatetom (Elf_Data *__dest, const Elf_Data *__src,
301:                  unsigned int __encode);
302:
303: /* Convert data structure from to the representation in memory
304:    represented by ELF file representation.  */
305: extern Elf_Data *elf32_xlatetof (Elf_Data *__dest, const Elf_Data *__src,
306:                  unsigned int __encode);
307: /* Same for 64 bit class.  */
308: extern Elf_Data *elf64_xlatetof (Elf_Data *__dest, const Elf_Data *__src,
309:                  unsigned int __encode);
310:
311:
312: /* Return error code of last failing function call.  This value is kept
```

(For readability, not all matches are indicated.)

```
   separately for each thread.  */
extern int elf_errno (void);

/* Return error string for ERROR.  If ERROR is zero, return error string
   for most recent error or NULL is none occurred.  If ERROR is -1 the
   behaviour is similar to the last case except that not NULL but a legal
   string is returned.  */
extern const char *elf_errmsg (int __error);


/* Coordinate ELF library and application versions.  */
extern unsigned int elf_version (unsigned int __version);

/* Set fill bytes used to fill holes in data structures.  */
extern void elf_fill (int __fill);

/* Compute hash value.  */
extern unsigned long int elf_hash (const char *__string)
       __attribute__ ((__pure__));


/* Compute simple checksum from permanent parts of the ELF file.  */
extern long int elf32_checksum (Elf *__elf);
/* Similar but this time the binary calls is ELFCLASS64.  */
extern long int elf64_checksum (Elf *__elf);

#ifdef __cplusplus
}
#endif

#endif  /* libelf.h */
```