

**NAME**

`ldap_first_attribute`, `ldap_next_attribute` - step through LDAP entry attributes

**LIBRARY**

OpenLDAP LDAP (libldap, -lldap)

**SYNOPSIS**

```
#include <ldap.h>
```

```
char *ldap_first_attribute(
    LDAP *ld, LDAPMessage *entry, BerElement **berptr )
```

```
char *ldap_next_attribute(
    LDAP *ld, LDAPMessage *entry, BerElement *ber )
```

```
int ldap_get_attribute_ber(
    LDAP *ld, LDAPMessage *entry, BerElement *ber,
    BerValue *attr, BerVarray *vals )
```

**DESCRIPTION**

The `ldap_first_attribute()`, `ldap_next_attribute()` and `ldap_get_attribute_ber()` routines are used to step through the attributes in an LDAP entry. `ldap_first_attribute()` takes an *entry* as returned by `ldap_first_entry(3)` or `ldap_next_entry(3)` and returns a pointer to character string containing the first attribute description in the entry. `ldap_next_attribute()` returns the next attribute description in the entry.

It also returns, in *berptr*, a pointer to a `BerElement` it has allocated to keep track of its current position. This pointer should be passed to subsequent calls to `ldap_next_attribute()` and is used to effectively step through the entry's attributes. The caller is solely responsible for freeing the `BerElement` pointed to by *berptr* when it is no longer needed by calling `ber_free(3)`. When calling `ber_free(3)` in this instance, be sure the second argument is 0.

The attribute names returned are suitable for inclusion in a call to `ldap_get_values(3)` to retrieve the attribute's values.

The `ldap_get_attribute_ber()` routine allows one to iterate over all attributes in-place, without allocating memory to hold text for the attribute name or its values, if requested. The use case is similar to `ldap_next_attribute()` except that the attribute name is returned into *attr* and, if *vals* is non-NULL, the list of values is stored there. Both point into the LDAP message and remain valid only while the entry is valid. The caller is still responsible for freeing *vals* with `ldap_memfree(3)`, if used.

**ERRORS**

If an error occurs, NULL is returned and the `ld_errno` field in the `ld` parameter is set to indicate the error. See **ldap\_error(3)** for a description of possible error codes.

**NOTES**

The **ldap\_first\_attribute()** and **ldap\_next\_attribute()** return dynamically allocated memory that must be freed by the caller via **ldap\_memfree(3)**. For **ldap\_get\_attribute\_ber()**, only the actual *vals* pointer needs to be freed with **ldap\_memfree(3)**, other data is accounted for as part of *ber*.

**SEE ALSO**

**ldap(3)**, **ldap\_first\_entry(3)**, **ldap\_get\_values(3)**, **ldap\_error(3)**

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