

**NAME**

Xau library: XauFileName, XauReadAuth, XauLockAuth, XauUnlockAuth, XauWriteAuth, XauDisposeAuth, XauGetAuthByAddr, XauGetBestAuthByAddr – X authority database routines

**SYNOPSIS**

```
#include <X11/Xauth.h>

typedef struct xauth {
    unsigned short    family;
    unsigned short    address_length;
    char              *address;
    unsigned short    number_length;
    char              *number;
    unsigned short    name_length;
    char              *name;
    unsigned short    data_length;
    char              *data;
} Xauth;

char *XauFileName (void);

Xauth *XauReadAuth (FILE *auth_file);

int XauWriteAuth (FILE *auth_file, Xauth *auth);

Xauth *XauGetAuthByAddr (unsigned short family, unsigned short
    address_length, const char *address, unsigned short
    number_length, const char *number, unsigned short
    name_length, const char *name);

Xauth *XauGetBestAuthByAddr (unsigned short family, unsigned short
    address_length, const char *address, unsigned short
    number_length, const char *number, int types_length,
    char **types, const int *type_lengths);

int XauLockAuth (const char *file_name, int retries, int
    timeout, long dead);

int XauUnlockAuth (const char *file_name);

int XauDisposeAuth (Xauth *auth);
```

**DESCRIPTION**

**XauFileName** generates the default authorization file name by first checking the XAUTHORITY environment variable if set, else it returns \$HOME/.Xauthority. This name is statically allocated and should not be freed.

**XauReadAuth** reads the next entry from *auth\_file*. The entry is **not** statically allocated and should be freed by calling *XauDisposeAuth*.

**XauWriteAuth** writes an authorization entry to *auth\_file*. It returns 1 on success, 0 on failure.

**XauGetAuthByAddr** searches for an entry which matches the given network address/display number pair. The entry is **not** statically allocated and should be freed by calling *XauDisposeAuth*.

**XauGetBestAuthByAddr** is similar to **XauGetAuthByAddr**, except that a list of acceptable authentication methods is specified. Xau will choose the file entry which matches the earliest entry in this list (e.g., the most secure authentication method). The *types* argument is an array of strings, one string for each authentication method. *types\_length* specifies how many elements are in the *types* array. *types\_lengths* is an array of integers representing the length of each string.

**XauLockAuth** does the work necessary to synchronously update an authorization file. First it makes two file names, one with “-c” appended to *file\_name*, the other with “-l” appended. If the “-c” file already

exists and is more than *dead* seconds old, *XauLockAuth* removes it and the associated “-l” file. To prevent possible synchronization troubles with NFS, a *dead* value of zero forces the files to be removed. *XauLockAuth* makes *retries* attempts to create and link the file names, pausing *timeout* seconds between each attempt. *XauLockAuth* returns a collection of values depending on the results:

**LOCK\_ERROR**

A system error occurred, either a *file\_name* which is too long, or an unexpected failure from a system call. *errno* may prove useful.

**LOCK\_TIMEOUT**

*retries* attempts failed

**LOCK\_SUCCESS**

The lock succeeded.

**XauUnlockAuth** undoes the work of *XauLockAuth* by unlinking both the “-c” and “-l” file names.

**XauDisposeAuth** frees storage allocated to hold an authorization entry.

**SEE ALSO**

xauth(1), xdm(1)

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