Getting Data Out of a Descriptor List

You can use the **AECountItems** function to count the number of items in a descriptor list, and you can use **AEGetNthDesc** or **AEGetNthPtr** to get a descriptor record or its data out of a descriptor list.

The Open Documents event contains a direct parameter that specifies the list of documents to open. The list of documents is contained in a descriptor list. After extracting the **descriptor list** from the parameter, you can determine the number of items in the list and then extract each descriptor record from the descriptor list.

For example, when your handler receives an Open Documents event, you can use the **AEGetParamDesc** function to return the direct parameter as a descriptor list. You can then use **AECountItems** to return the number of descriptor records in the list.

```
AppleEvent     theAppleEvent;
AEDescList docList;
long           itemsInList;
OSErr          myErr;

myErr = AEGetParamDesc(&theAppleEvent, keyDirectObject, typeAEList,
                &docList);
myErr = AECountItems(&docList, &itemsInList);
```

The **AEGetParamDesc** function returns in the *docList* variable the descriptor list from the direct parameter of the Open Documents event. You specify this list to the **AECountItems** function.

You specify the descriptor list whose items you want to count in the first parameter to **AECountItems**. The **Apple Event Manager** returns the number of items in the list in the second parameter. When extracting the descriptor records from a list, you often use the number of items as a loop index. Here's an example:

```
for (index = 1; index <= itemsInList; index++) {
        //for each descriptor record in the list, get its data
}
```

The format of the descriptor records in a descriptor list is private to the **Apple Event Manager**. You must use the **AEGetNthPtr** or **AEGetNthDesc** function to extract descriptor records from a descriptor list.

You specify the descriptor list that contains the desired descriptor records and an *index* as parameters to the **AEGetNthPtr** function. The *index* represents a specific descriptor record in the descriptor list. **AEGetNthPtr** returns the data from the descriptor record represented by the specified *index*.

You also specify the descriptor type the function should use to return the data, a buffer to store the data, and the size of this buffer. The **AEGetNthPtr** function returns the keyword of the parameter, the descriptor type of the

returned data, and the actual size of the data, and it places the requested data in the specified buffer.

Here's an example that uses the **AEGetNthPtr** function to extract an item from the descriptor list in the direct parameter of the **Open Documents event**.

```
myErr = AEGetNthPtr(&docList, index, typeFSS, &keywd, &returnedType,
                    &myFSS, sizeof(myFSS), &actualSize);
```

The *docList* variable specifies the descriptor list from the direct parameter of the Open Documents event. The *index* variable specifies the index of the descriptor record to extract. You can use the typeFSS descriptor type, as in this example, to specify that the data be returned as a file system specification record (FSSpec). The **Apple Event Manager** automatically coerces the original data type of the descriptor record from an alias record to a file system specification record. The **AEGetNthPtr** function returns the keyword of the parameter in the *keywd* variable. The function returns in the returnedType variable the descriptor type of the resulting data.

You specify a buffer to hold the desired data and the size (in bytes) of the buffer as parameters to the **AEGetNthPtr** function. In this example, the *myFSS* variable specifies the buffer. The function returns the actual size of the data in the *actualSize* variable. If this size is larger than the size of the buffer you provided, you know that you didn't get all of the data for the descriptor record.

The following program shows a more complete example of extracting the items from a descriptor list in the Open Documents event.

```
// Extracting items from a descriptor list

// Assuming inclusion of <MacHeaders>

#include <AppleEvents.h>

void    DoError (OSErr myErr);
OSErr  MyOpenFile (FSSpec *myFSS);

long            index,itemsInList;
AEDescList docList;
AEKeyword       keywd;
DescType        returnedType;
FSSpec      myFSS;
Size            actualSize;
OSErr           myErr;

for (index=1; index<=itemsInList; index++) {
    myErr = AEGetNthPtr(&docList, index, typeFSS, &keywd,
                    &returnedType, (Ptr)&myFSS,
                    sizeof(myFSS), &actualSize);

    if (myErr)
        DoError(myErr);
```

```
        myErr = MyOpenFile(&myFSS);
        if (myErr)
            DoError(myErr);
    }

    myErr = AEDisposeDesc(&docList);
```