Getting Data Out of an Apple Event

The **Apple Event Manager** stores the parameters and attributes of an Apple event in a format that is internal to the **Apple Event Manager**. You use **Apple Event Manager** functions to retrieve the data from an Apple event and return it to your application in a format your application can use.

The **Apple Event Manager** provides functions that retrieve data from parameters and attributes. Most of these functions are available in two forms: one that returns the desired data in a specified buffer and one that returns a descriptor record containing the same data. For example, the **AEGetParamPtr** function returns the data of a specified parameter, and the **AEGetParamDesc** function returns the descriptor record of a specified parameter.

You can also use **Apple Event Manager** functions to get data out of descriptor records, descriptor lists, and AE records. You use similar functions to put data into descriptor records, descriptor lists, and AE records.

When your handler receives an Apple event, you'll typically use the **AEGetParamPtr**, **AEGetAttributePtr**, **AEGetParamDesc**, or **AEGetAttributeDesc** function to get the data out of the Apple event.

Some **Apple Event Manager** functions let your application request that the data be returned using any descriptor type, even if it is different from the original descriptor type. If the original data is of a different descriptor type, the **Apple Event Manager** attempts to coerce the data to the requested descriptor type.

For example, the **AEGetParamPtr** function lets you specify the desired descriptor type of the resulting data.

```
AppleEvent      theAppleEvent;
DescType        returnedType;
long            multResult;
Size            actualSize;
OSErr           myErr;

myErr = AEGetParamPtr(&theAppleEvent, keyMultResult, typeLongInteger,
                      &returnedType, (Ptr) &multResult, sizeof(multResult),
                      &actualSize);
```

In this example, the desired type is specified in the third parameter by the typeLongInteger descriptor type. This requests that the **Apple Event Manager** coerce the data to the type defined by this descriptor type (a long integer) if it is not already of this type.

To ensure that no coercion is performed and that the descriptor type of the result is of the same type as the original, you can specify typeWildCard for the desired descriptor type.

The **Apple Event Manager** returns the descriptor type of the resulting data

in the fourth parameter. This is useful information when you specify typeWildCard as the desired descriptor type; you can determine the descriptor type of the resulting data by examining the fourth parameter.

The **Apple Event Manager** can coerce many different types of data into another. For example, the **Apple Event Manager** can convert alias records to file system specification records (FSSpec), integers to Boolean data types, and characters to numeric data types, in addition to other data type conversions. See **Built-in Coercion Handlers** for a list of the types of coercions that the **Apple Event Manager** can perform.

You can also provide your own coercion handlers to coerce other data types. See **Writing and Installing Coercion Handlers** for more information.

Parameters are keyword-specified descriptor records. You can use **AEGetParamDesc** to get the descriptor record of a parameter, or you can use **AEGetParamPtr** to get the data out of the **descriptor record** of a parameter. Attributes are also keyword-specified descriptor records, and you can use similar routines to get the descriptor record of an attribute or to get the data out of an attribute.

Examples of how to use the **AEGetParamPtr**, **AEGetAttributePtr**, **AEGetParamDesc**, or **AEGetAttributeDesc** function to get the data out of an Apple event are included in **Getting Data Out of a Parameter** and **Getting Data Out of an Attribute**.