New Technical Notes

Macintosh

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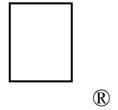
Developer Support

GetNextEvent; Blinking Apple Menu
Toolbox M.TB.GetNextEvent

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Wherein arcane mysteries are unraveled so you can make the Alarm Clock (or a similar desk accessory) blink the Apple menu at the appointed second. Also, why `GetNextEvent` is a good thing.

The obvious

Don't disable interrupts within an application! There will almost certainly come a time (or Macintosh) where you won't be able to change the interrupt mask because the processor is running in user mode. The one-second interrupt is used to blink the apple.

The not-so-obvious

You must call `GetNextEvent` periodically. `GetNextEvent` uses a filter (GNE filter) which allows for a routine to be installed which overrides (or augments) the behavior of the system. The GNE filter is installed by pointing the low-memory global `jGNEFilter` (a long word at `$29A`) to the routine. After all other GNE processing is complete, the `routine` will be called with `A1` pointing to the event record and `D0` containing the boolean result. The filter may then modify the event record or change the function result by altering the word on the stack at `4(A7)`. This word will match `D0` initially, of course.

A GNE filter is used to do the blinking when the interrupt handler has announced that the moment is at hand. `GetOSEvent` won't do. If you don't have a standard main event loop, it is generally a good idea to give `GetNextEvent` (and `SystemTask`, too) a call whenever you have any idle time. `GetNextEvent` "extra" services include, but aren't limited to, the following:

1. Calling the GNE filter.
2. Removing lingering disk-switched windows (uncommon unless memory is tight).
3. Making Window Manager activate, deactivate and update events happen.
4. Getting various events from a journaling driver when one is playing.
5. Giving `SystemEvent` a chance at each event.
6. Running command-shift function key routines (e.g. command-shift-4 to print the screen to an ImageWriter).

The more subtle

When the (default) GNE filter sees that the interrupt handler has set the "time to blink" flag, it looks at the first menu in `MenuList`. The title of that menu must consist solely of the "apple" character or no blinking will occur. It really just looks at the first word of the string to see if it is `$0114`. This is a Pascal string which has only the `$14` "apple" character in it. So you musn't have any spaces or any other characters in the title of your first menu or you'll get no blinkin' results.

Further Reference:
- The Menu Manager
- The Toolbox Event Manager
- The Desk Manager