

Apple Newton - A Personal Digital Assistant from 25 years ago

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Overview and History

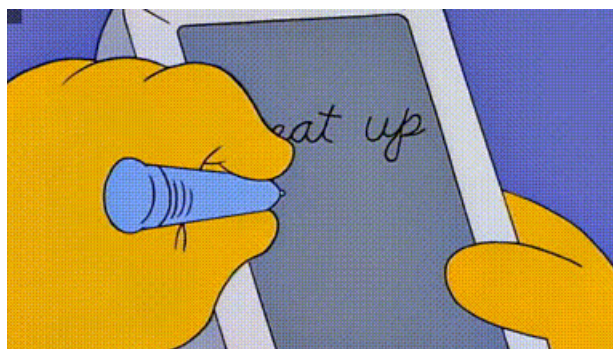


The Newton was a Personal Digital Assistant developed by Apple in the late 80s and early 90s. Though it might not look too advanced now, at the time it was fairly revolutionary. It was the first PDA to use handwriting recognition and the first Apple product to use an ARM CPU.

There were earlier PDAs (though the term was actually first used by Apple CEO John Sculley to refer to the Newton) from brands like Psion, but they were more like electronic address books than full-fledged computers. The Psion Series 3, released a year before the Newton, was much more capable but used a clamshell design with a full keyboard. The Newton's design was very different.

If you read the guide about [General Magic \(https://adafru.it/GjA\)](https://adafru.it/GjA), the Newton will seem familiar. General Magic had been working on their project in secret and were shocked to see Sculley (Apple CEO and General Magic board member) release the Newton in 1992 with a lot of their ideas incorporated.

Unfortunately the handwriting recognition, the most obvious and exciting feature, wasn't very good when it was first released. The software required training and would get better at recognizing the user's handwriting, but the process could take weeks or months. It was not received well by critics and was made fun of in *Dooniesbury* and *The Simpsons* ("Lisa on Ice"). The later versions greatly improved on the original but it retains its bad reputation.



Other features of the Newton that were new at the time are common now. Data is stored in databases called soups and programs can access soups from other programs, so the calendar can see contacts in the address book or the notes app can see your calendar appointments. If you're used to modern iOS or Android that seems like a basic thing, but it was new on the Newton.

The end of the Newton product line coincided with Steve Jobs return to Apple in 1997. Sales had been slow anyway, but Jobs didn't like the device and famously hated the stylus. He killed it off but held onto the good parts for the iPhone 10 years later.

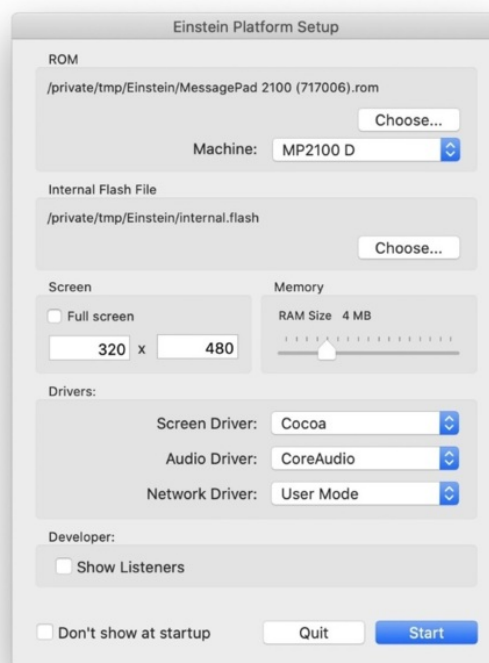
You can still find plenty of Newtons for sale, the earlier versions are more affordable but the later, more capable ones fetch a few hundred dollars. Luckily there's an emulator so let's install that and check it out!

Einstein

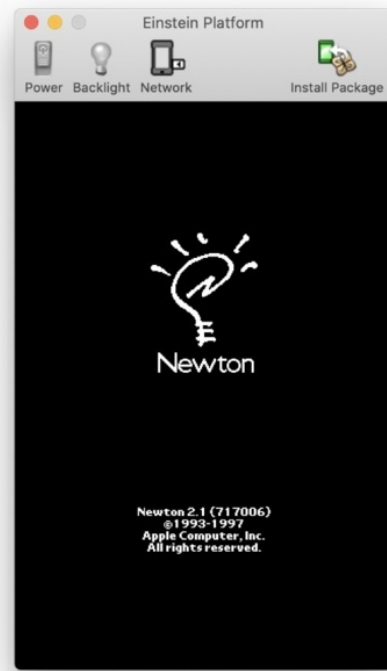
Real Newtons are a bit expensive to pick up since they've become collectable, but thankfully there's an open-source emulator called [Einstein](https://adafru.it/GjB) (<https://adafru.it/GjB>). It has binaries for macOS and Ubuntu and can be built for iOS, macOS, Linux, and Android. Note that the build provided for Ubuntu is 32-bit, so on a 64-bit system without 32-bit support it won't run ("no such file or directory").

It needs a Newton ROM to run but they're not distributed with it since that's a legally murky area. Don't worry though, they're [around](https://adafru.it/GjC) (<https://adafru.it/GjC>). Get the 8MB MessagePad 2100 ROM.

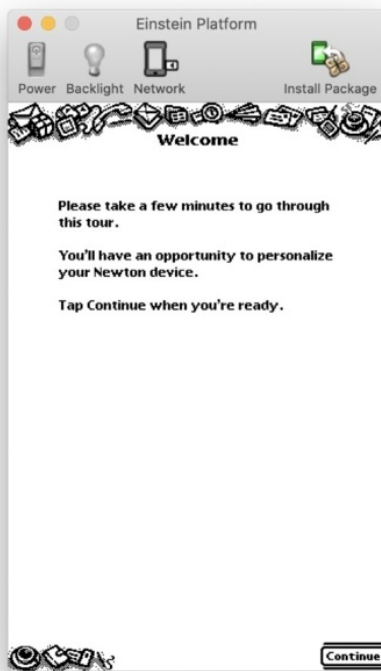
For the full effect, you need to use Einstein with a touchscreen, even better on something with a stylus/pen, but it'll work with a keyboard and mouse too. To use it on iOS and Android, you'll need to build it from source and that's beyond this guide, so we'll stick to macOS or Ubuntu. If you're using Windows you can use [VirtualBox](https://adafru.it/eiS) (<https://adafru.it/eiS>) to install Ubuntu 32 bit and get it running there.



Choose your ROM file here and pick the MP2100 D, the last and most capable Newton. Make sure you have 4MB of RAM and the defaults should be fine for everything else. You can choose the location of your internal flash file - this will save the data of your emulated Newton.

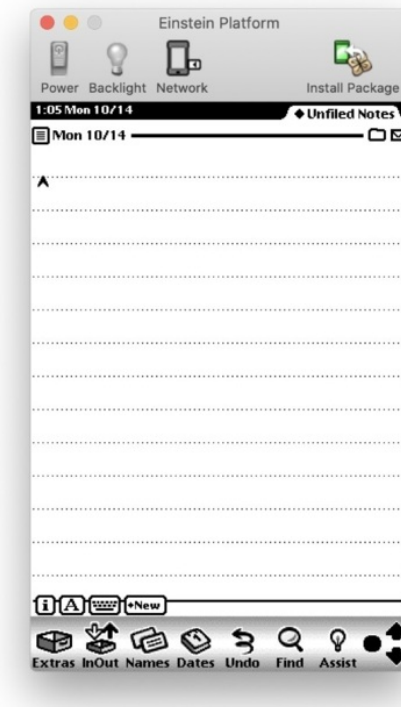


Welcome to Newton! First it'll have you do some setup tasks.



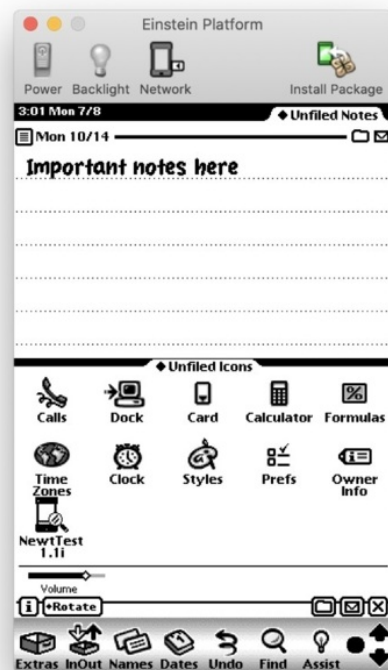
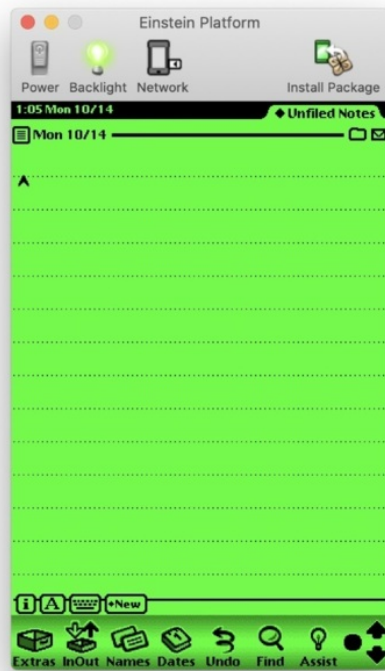
Most of them aren't necessary but you can customize it as much as you like. When you're finished with that you'll reach the main screen, the notes page.

Newton OS



The Newton is great for jotting down notes, and the notes app (though they don't feel quite like the apps we're used to) is the main page. From here you can access mail (InOut), contacts (Names), a calendar (Dates), and a few useful features like Find and Assist. More apps are found in the Extras drawer. You can also get an onscreen keyboard by tapping the mini-keyboard icon.

For fun you can turn on the backlight, but it's not really necessary in the emulator. On the real thing it's very useful.



Here are the Extras that come with it. You can find other software packages to install and they'll show up here. You can also organize the icons (notice how these are "Unfiled") by tapping and holding to select one, then tap the folder icon to file it somewhere. This same method is used for notes, contacts, calendar events, etc.

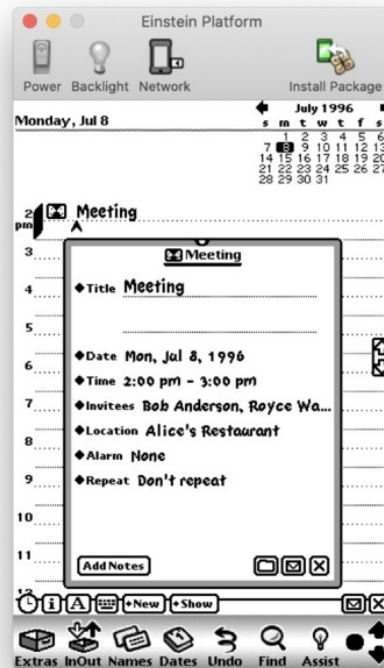
Installing a new package is easy, just find one (check out the Resources page) and click Install Package, then select your pkg file and it's done.

To see how the soups work and connect with each other, go to Dates, tap New, then tap Meeting. Give it a title and

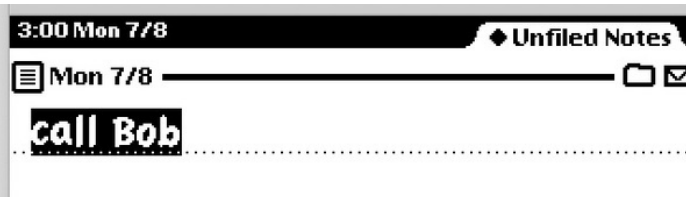
then tap Invitees. There are some entries in the contacts already so you can pick a few to add to the meeting. Tap the X when you're done, it'll keep what you've selected and close that part.

Now tap Location to add a location. Again you can pick from your Names, let's meet at Alice's Restaurant.

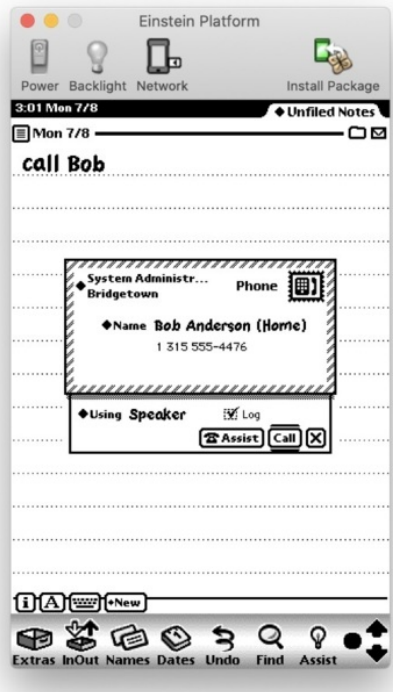
This seems pretty simple to us in 2019, but in 1993 this was new - most programs did not interact this nicely. Something as easy as choosing items from your contacts program in a calendar program was not a streamlined process.



There's also a button down at the bottom called Assist. Tap that and something like an early Siri will help you with whatever you need. Tap please and select the type of request you want. Tap Do and then you can add details to the request. You can also highlight some text (tap and hold, then drag the thicker pen to select) and then tap Assist.



Try it out, write "call Bob" in a note, then highlight it and tap Assist. The assistant will bring up the phone dialog with all of the details for Bob Anderson already filled in.



Legacy

The Newton had a short life, but garnered a loyal following, with active users more than 20 years after it was cancelled. The technology and ideas in the Newton eventually made their way into the iPhone and now live in billions of devices around the world. The later handwriting recognition system, Print Recognizer, made its way into OS X and could be used with a pen tablet. It was discontinued with macOS 10.15 in October, 2019.

There were retail stores dedicated to the Newton called Newton Source. They weren't actually run by Apple, but by a Newton enthusiast who wanted to improve on the computer store experience. The stores were more relaxed and had stations where you could use the Newton and talk to an assistant about them, very much like the experience of a modern Apple store. The original Newton Source in New York was only a block away from the current location of the Fifth Avenue Apple Store.

One of the most impactful decisions made for the Newton is probably in the device you use every day. In order to develop a low power CPU for the Newton, Apple joined with Acorn Computers and VLSI to form Advanced RISC Machines Ltd, better known as ARM. They developed the ARM6 architecture and the ARM610 CPU was used in all of the early Newtons. Today nearly every smartphone and many other embedded devices use ARM CPUs.

Like General Magic and other projects of the era that were commercial failures, Newton didn't survive but went on to influence things that most of us use every day.

Resources

Here is a list of resources related to the Newton.

[Einstein \(https://adafru.it/GjB\)](https://adafru.it/GjB)

[Newton FAQ \(https://adafru.it/GjD\)](https://adafru.it/GjD)

[United Network of Newton Archives \(https://adafru.it/GjE\)](https://adafru.it/GjE)

[newtontalk.net \(https://adafru.it/GjF\)](https://adafru.it/GjF)

[Newted \(https://adafru.it/Gka\)](https://adafru.it/Gka) - check out the Manuals page

[The Story Behind Apple's Newton \(https://adafru.it/Gkb\)](https://adafru.it/Gkb)

[Meet the loyal Newton fans who keep the device alive and kicking \(https://adafru.it/Gkc\)](https://adafru.it/Gkc)

[Love Notes to Newton \(https://adafru.it/Gkd\)](https://adafru.it/Gkd) - A documentary all about the Newton

