

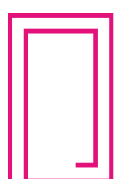
Illustration by William Joel / The Verge

TECH

YOUR MILLION-DOLLAR NFT CAN BREAK TOMORROW IF YOU'RE NOT CAREFUL

Without maintenance, an NFT's art could disappear

By [Jacob Kastrenakes](#) [@jake_k](#) Mar 25, 2021, 11:55am EDT



pen up [the \\$69 million NFT](#) that Beeple sold at Christie's, and you won't find much. The name of the artwork isn't there. The name of the artist is missing. And crucially, you won't even find the actual piece of art.

That's not a flaw in Beeple's NFT — it's just how the system works.

It turns out, the house of cards that is the NFT system is even more precarious than it first appears. NFTs are fundamentally built on trust — trust that a seller won't screw you over, trust that these tokens magically have value — and that holds true even at the deepest level of the system. Ultimately, you're buying a collection of metadata defining what you own.

"THAT'S AN AWFULLY EXPENSIVE 404 ERROR FOR BUYERS OF THESE NFTS."

But there's one significant gap in the system ensuring that an NFT is held together: NFTs use *links* to direct you to somewhere else where the art and any details about it are being stored. And as anyone who has browsed the internet before should know, links can and do die. So what happens if your NFT breaks down and points to nothing?

"That's an awfully expensive 404 error for buyers of these NFTs," Aaron Perzanowski, a law professor at Case Western Reserve University and co-author of *The End of Ownership*, wrote in an email to *The Verge*.

NFTs are digital tokens used to buy and sell digital art. But unlike a painting, which can be placed in a buyer's home, an NFT is more like a piece of paper saying you own something — generally, a digital illustration or a video. Sometimes, [a weird-looking cat](#).

WHAT'S AN NFT?

NFTs allow you to buy and sell ownership of unique digital items and keep track of who owns them using the blockchain. NFT stands for "non-fungible token," and it can technically contain anything digital, including drawings, animated GIFs, songs, or items in video games. An NFT can either be one-of-a-kind, like a real-life painting, or one copy of many, like trading cards, but the blockchain keeps track of who has ownership of the file.

NFTs have been making headlines lately, some selling for millions of dollars, with high-profile memes like [Nyan Cat](#) and the ["deal with it" sunglasses](#) being put up for auction. There's also a lot of discussion about the massive electricity use and [environmental](#)

[impacts](#) of NFTs. If you (understandably) still have questions, you can read through [our NFT FAQ](#).

The system usually relies on the Ethereum blockchain, which ensures a few things: it keeps an unalterable record of everyone who has owned the NFT, and it keeps the NFT from ever changing. That means someone who buys an NFT and then resells it can't misrepresent what they own. It's all there in the NFT, just how it was when they bought it. You can think of it like the papers that authenticate a thoroughbred: they're not the horse, but they certify the provenance and history of one.

Very little data is stored directly inside an NFT, though. The NFT includes information on where you can *find* a description of the artist's name and the title of the work, but that information is not typically on the blockchain itself. NFTs include information on where you can *find* the artwork they represent, but the actual artwork is still a link away.

Traditional URLs pose real problems for NFTs. The owner of the domain could redirect the URL to point to something else (leaving you with, perhaps, a million-dollar Rickroll), or the owner of the domain could just forget to pay their hosting bill, and the whole thing disappears. The animation that Grimes sold for \$389,000 is [primarily sourced](#) to a pair of traditional URLs, which could break down if either of the two different companies (Nifty Gateway, the auction site; or Cloudinary, the web host) went under. As the buyer, this is something you'd have no control over, unless you're wealthy enough to buy out the entire domain and pay to keep it online.

To solve that problem, many NFTs turn to a system called IPFS, or InterPlanetary File System. Rather than identifying a specific file at a specific domain, IPFS addresses let you find a piece of content so long as *someone* somewhere on the IPFS network is hosting it. Grimes' NFT uses this as a backup, and [Beeple's NFT](#) uses this primarily. That means a multitude of hosts, rather than a single domain owner, could be ensuring these files remain online. This system also gives buyers control. They can pay to keep their NFT's files online. They still have to remember to pay the hosting bill, but they can host it anywhere in the IPFS network.

"ONE HARD DRIVE CRASHING COULD LEAD TO PERMANENT LOSS OF THE ASSETS."

Still, the system has flaws. The team behind Check My NFT has been looking inside of NFTs to see if their IPFS addresses actually work, and in several cases, they've found files that just won't load. The team found artworks that were temporarily missing from major artists, including [Grimes, deadmau5, and Steve Aoki](#). The files came back online eventually, but only after the team called attention to their absence. The files have to be actively available on the network for the system to work, and unlike with a domain owner, no host has a singular responsibility to do that for files on IPFS.

"One hard drive crashing could lead to permanent loss of the assets," the Check My NFT team warned in a message to *The Verge*.

Like a painting, NFTs need to be maintained. If a buyer purchases an NFT that relies on IPFS, it'll ultimately be on them to ensure the file continues to be hosted and available to the system. If the NFT relies on a traditional URL, then buyers would be in a more precarious position, having to hope that whatever third party currently hosts the file — often the auction site, like with Grimes' NFT — stays online.

So there's a very real chance that, some years from now, an NFT will point to a missing file. If that's the case, how do you prove what it is you actually own? "You're still at this stage of evolution of blockchain where you need to have a traditional written contract that tells you what you are getting and that's enforceable against the seller of that asset," David Hoppe, managing partner at Gamma Law, told *The Verge*.

EVEN IF THE NFT FALLS APART, THERE COULD BE VALUE AS LONG AS THE ARTWORK STILL EXISTS

But most buyers don't exactly have that. Despite the buzz around Ethereum's "smart contracts," NFTs typically do not include the *literal contract* a buyer agrees to with the seller of a work detailing what they're getting and how they can use it. Those rights are typically just built into an auction site's terms of service. "In many cases, NFTs offer very little beyond a bare claim of ownership of the NFT itself," Perzanowski wrote.

Buyers could end up in one of two situations: in one case, they own an NFT with a broken link, but they and the rest of the world understand what artwork it used to represent — say, an extremely expensive collage. So long as that image exists *somewhere* in the world, it's possible the NFT would retain value as long as the artist, owner, and prospective buyers all agree on what the token is meant to represent. It is, after all, a system built on trust.

In the other scenario, the image has gone missing, and no one can tell what artwork the NFT was originally tied to. If that's the case, it's hard to imagine the NFT would have had much value anyway. You can't sell a painting that's been burned or a statue that's been lost. And an NFT with missing art is just that — nothing to look at. ■

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