



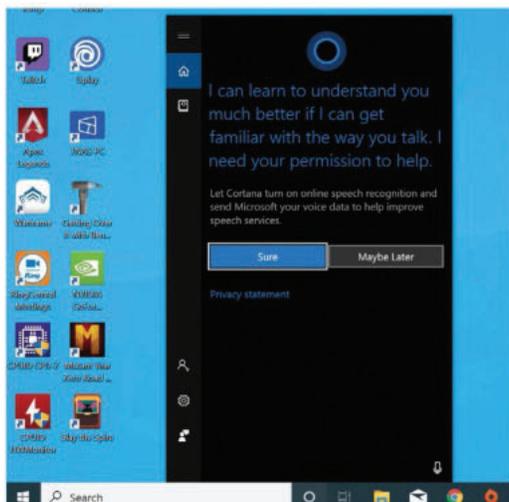
# GENERAL TIPS FOR WINDOWS 10

## 01 KEEP WINDOWS FULLY UP TO DATE

Ah, the Windows Update. Truly the modern-day raven, rap-tap-tapping on Edgar Allen Poe's operating system with menacing intent. Taking control of your updates is objective number one for anyone trying to optimize their PC, so jump into "Update Settings" and remember to smash that "Check For Updates" button. You can turn on auto-updates, too, under "Advanced options," but if you have a metered connection, we advise against this, and instead recommend manual updates. You can also pause all updates for up to two weeks; useful if you want to try something in a specific version of Windows 10.

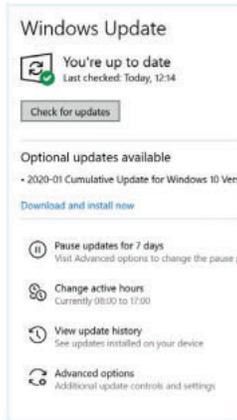
## 02 SHUT CORTANA UP

Get her out! For the vast majority of users, Cortana is little more than a frustration baked into the core of Windows 10. Annoying pop-ups, constant data-gathering, and forced Bing search (come on, Microsoft...) make Cortana the least helpful voice assistant in the biz, but fortunately, shutting her down is reasonably straightforward. Find the Cortana page under "Settings," then



We're sure a select few of our readers find Cortana helpful. We do not.

Keep your background apps to the bare minimum whenever possible.



Keeping Windows up to date can feel like a rather Sisyphean task at times.

toggle all the sliders off. To complete the process, head back out to the main "Settings" menu. Under "Privacy Settings," you'll find "Speech" and "Inking and typing personalization." Turn both of these off to cut down the amount of data Cortana gathers from your typical PC usage. You can also block all apps from accessing your camera and microphone on the "Privacy" page.

## 03 DISABLE STARTUP APPS

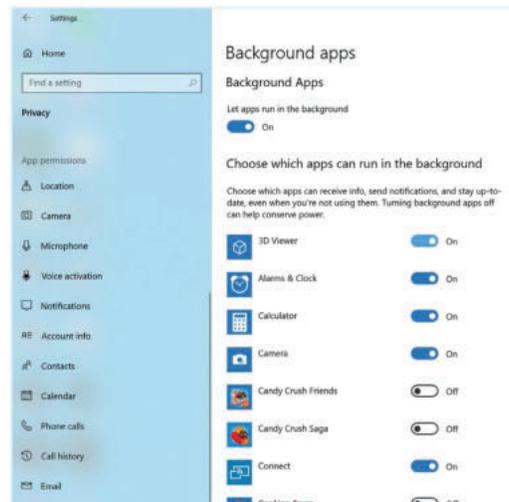
We've all been there, booting up our PC to get a quick task completed, only to be waylaid by Spotify, Steam, Uplay, and Discord introducing themselves like the worst barbershop quartet of all time. Windows has you covered, though—the "Startup" page under "App Settings" lets you view which apps are set to start up immediately (albeit in the background) when you log into Windows, and also which ones have a higher impact on your boot times. Toggle off any of these that you want to open manually, such as Spotify or OneDrive, and your system should start up faster.

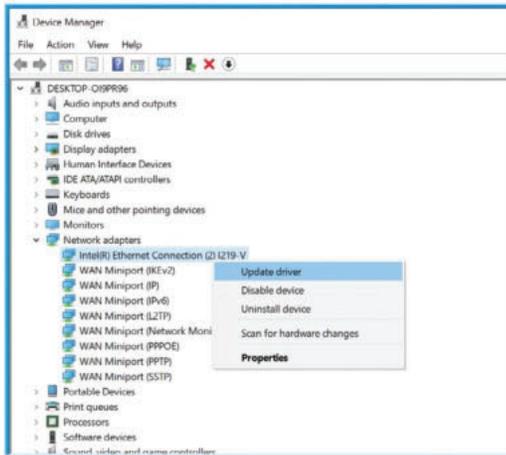
## 04 DISABLE BACKGROUND APPS

This one comes down to preference, and isn't so necessary on more powerful systems with plenty of memory and high-speed storage. Under "Privacy Settings," you can individually select which apps you want to run in the background, and disable the rest. There's a ton of tools included with Windows 10 that you might use sometimes, but don't ever want running in the background. Windows News? Disabled. Voice Recorder? Deactivated. Xbox Console Companion? Begone!

## 05 UNINSTALL UNWANTED APPLICATIONS

Speaking of stuff included with Windows 10, there's plenty of bloatware you can just get rid of. The most obvious contender is of course *Candy Crush*, but if you take a trip into "App Settings" and scroll through the "Apps & features" list, you may find a surprising amount of software you never use, and





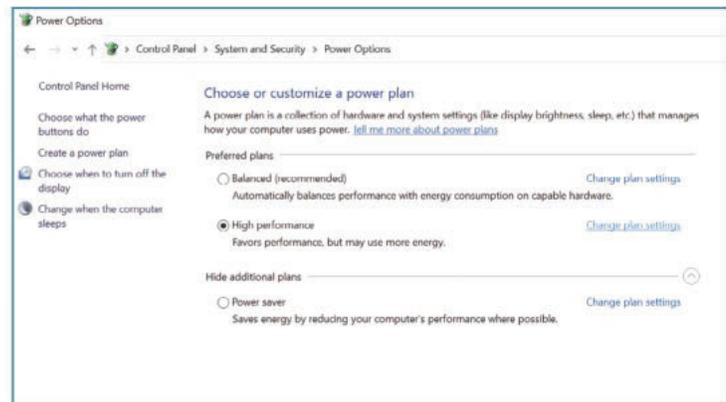
If something isn't working, check all of your drivers are up to date in the Device Manager.

never intend to use. Click on a program to view options, and uninstall it from there. If you're unsure what a piece of software does, always look it up online before removing it.

**06 UPDATE DEVICE DRIVERS**  
Updating your drivers is often a handy fix for something not working with a PC, but it's a good idea to keep your device drivers up to date whenever possible. To check for updates, right-click the "Home" button and select "Device Manager," then right-click the device you want to update the drivers on. You can also scan for new hardware here; if you change something about your physical setup, you might need to relocate it within the Device Manager in order to update the drivers and ensure everything is working properly.

**07 LOG IN FASTER**  
The Windows 10 lock screen is a pointless innovation. Having to swipe up or hit the spacebar before logging in slows things down a bit, and using a conventional password is slower, too. First up, assign a PIN rather than a password for logging in; four digits and no need to hit Enter, either. If your system supports it, Windows Hello is pretty speedy, too. You can even remove the lock screen altogether, going straight to the login screen upon boot. Annoyingly, how you do this is different for Windows 10 Home and Windows 10 Pro. For Windows 10 Home edition, you need to run regedit from the "Run" prompt, make your way to "HKEY\_LOCAL\_MACHINE → SOFTWARE → Policies → Microsoft" and right-click "Windows," select "New → Key" and call it "Personalization." Once created, right-click this key and add a new "DWORD (32-bit) Value," with a name of "NoLockScreen." Double click this and set the "Value" to 1. For Win 10 Pro, hit Win-R, type "gpedit" and hit Enter. Double-click "Administrative Templates," double-click "Control Panel," click "Personalization," then double-click "Do not display the lock screen," and click "Enabled." Click "Apply," and then "OK." Job done.

## LAPTOP TIPS



Switching to Power Saver plan can be useful for prolonging battery life.

**08 Check Your Power Plan**  
It's worth taking a peek at your power plans in the Control Panel on a laptop, found under "Hardware and Sound." If it's a powerhouse laptop that you're essentially using plugged-in as a desktop replacement, slap that high performance plan on and call it a day; otherwise, you'll want to take a trip into the advanced power plan settings. The default balanced plan is usually a good call, but even then you might want to make some adjustments; like disabling certain ports while the monitor is asleep, for example.

**09 Disable Tips**  
Windows 10 wants to be helpful, but like a bumbling manservant, sometimes that help is actually less than helpful. By default, Windows 10 scans your system periodically to give you (usually unwanted) advice, and this can have a small impact on mobile processor performance, particularly in cheaper laptops. You can turn it off in System Settings, under "Notifications and

action." Just toggle off the slider marked "Get tips, tricks, and suggestions as you use Windows."

**10 Manage Your Temperatures Better**  
As we said earlier, it's a good idea to use third-party software, such as HardwareMonitor, to keep an eye on your system temperatures. This is even more critical with laptops, where keeping your CPU cool is an even more difficult endeavor. If you're regularly using demanding software on your laptop—3D rendering tools, for example—then heat spikes are inevitable, but there are a few things you can do to alleviate the temperature load on your poor laptop. The general optimization tips elsewhere in this article are a good start, but making sure you're positioning your laptop right is important, too. Don't actually put it on your lap, for starters. Ensure that all the air vents are clear, and only use it on hard, flat surfaces. If you have problems with temperature, consider using something to prop your laptop up, creating more empty space beneath it for better airflow.

**11 CREATE A RESTORE POINT AND RESTORE YOUR SYSTEM**  
If all hope is lost, returning to an earlier save point is the best course of action. This advice holds true for both videogames and Windows 10, although hopefully you'll never have to use it. In the Control Panel, go through "Security and System → System → System Protection," and you'll open up the

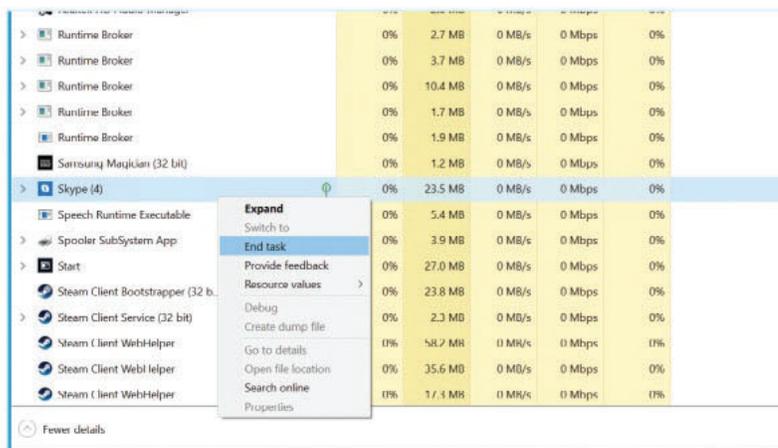


window for system restore options. You can hit the big “System Restore” button to revert your version of Windows to a saved restore point; your PC should regularly create these by default, but it saves over the previous one when it does so. Hit “Configure” and you can tweak your restore settings, or create new restore points. This isn’t something you need to do too often, but it’s worth having restore points for each of your drives, just in case a new software or OS update causes problems.

# 12

## TRACK CPU USAGE AT ALL TIMES

There’s a handy function Task Manager has hidden in its box of tricks. When the Task Manager window is open, you should see a tiny square icon with a grid pattern in the bottom-right corner of your screen, in the notification area. It may be hidden in the expanded menu; just click the arrow and drag it on to the taskbar if needed. That icon is a microcosm of your CPU usage, showing a tiny graph that indicates how much of your CPU is currently being utilized, and placing your mouse over it shows exact percentages. To keep it present when Task Manager isn’t open, select “Hide when minimized” from the Task Manager’s “Options” drop-down menu, then minimize the window.



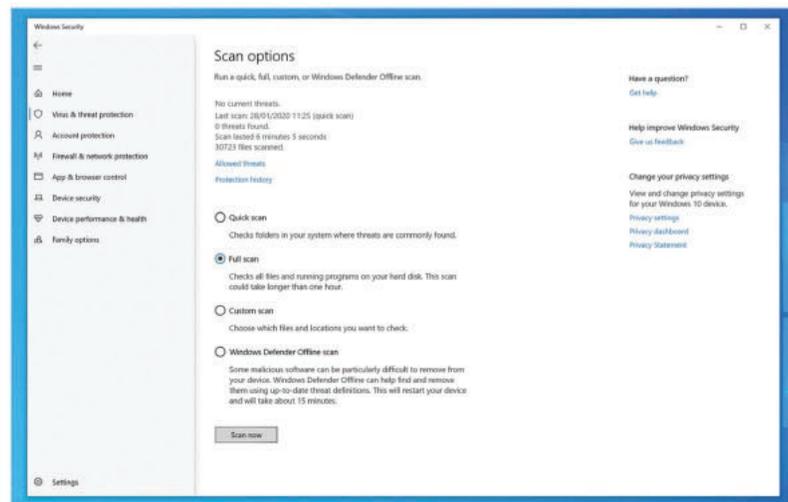
**Task Manager has evolved over the years, becoming a powerful system-monitoring tool.**

always err on the side of caution when it comes to downloading new programs.

# 13

## CHECK FOR MALWARE

Of course, ideally you won’t have a single bit of malware on your PC, but if you suspect something is amiss (or you watched in slow motion from across the room as your child clicked an extremely dubious link), Windows 10 can scan your system for viruses. Find the “Windows Security” tab under “Update & Security Settings,” and select “Virus & threat protection.” From this menu, you can run quick security scans on your system, or set up full scans that take longer. Windows Defender automatically scans your system for malware periodically; you can tweak that in this menu, too, check for security updates, and manually input exemptions from Defender’s scans. That last point can be particularly helpful for users who deal with a lot of unlicensed software or shareware, but



**Third-party antivirus software can be a hassle, but Windows Defender is decent and free.**

# 14

## USE TASK MANAGER BETTER

Making the best use of Task Manager is key to mastering control over Windows 10. First up, access it faster by right-clicking the “Home” button and selecting it; no need to Ctrl+Alt+Del here. You’re also going to want to get rid of the simplified view by hitting “More details” to expand to the full Task Manager experience. Here, you can monitor component usage, view the full suite of active and background processes, and a whole lot more that you won’t need to fiddle with. What is useful here is the ability to check exactly how much pressure each program is putting on your CPU, GPU, memory, and drives. If one background app is chewing up CPU power, or you want to compare the RAM impact of two different browsers, this is the place to do it. You can end any task manually by right-clicking it, but be careful—there are lots of background processes that are vital to your system’s operation, so don’t shut off anything you don’t recognize.

# 15

## DISABLE RESUME APPS ON STARTUP

Another matter of preference, here we’ll explain how to disable apps and browser tabs resuming upon booting up. If you use your system a lot and have numerous Chrome tabs you want to preserve, skip this step, but otherwise, take a trip into “Accounts Settings.” Under “Sign-in options,” at the bottom of the page, there’s a slider for reopening your apps “after an update or restart.” It tries to resume the active programs you had running when you last shut down your PC, potentially including non-essential background processes, and that slows down your PC’s boot time. Toggle it off.

# 16

## FREE UP DRIVE SPACE

The less stuff on your drive, the better it runs. This is more true of older hardware, but can also affect SATA SSDs to a significant degree. Clearing up your drive on a semi-regular basis is a good idea, as it can also improve the drive’s effective

lifespan. There's a few ways to do this, which work best when done in conjunction: First off, empty the recycle bin. It's easy to forget about that little white trash can on your desktop, but emptying it regularly is a good idea. Windows 10 also has a built-in disk cleanup tool, found under "Windows Administrative Tools" in the "Start" menu. If you've recently upgraded to Windows 10, this is worth doing; it can safely erase old system files. If you can, move files to a cloud storage solution, such as Google Drive or OneDrive—that can help, too!

## 17 CHECK YOUR SYSTEM HEALTH WITH PERFORMANCE MONITOR

Another handy tool in Windows 10's repertoire is the Performance Monitor. Activate it by punching "perfmon/report" into the search bar (without the quotes) and give it a few minutes to gather system data. It then spits out a highly detailed interactive report; any major issues with system files or processor loads should be highlighted immediately, and you can also check through a series of system checks and a resource overview, which can identify if one part of your system is working overtime when it shouldn't be.

## 18 TRACK YOUR TEMPERATURES

There is a multitude of third-party tools that can let you check your system's operating temperatures, but our recommendation would be CPUID's HardwareMonitor app, available for free from [www.cpubid.com](http://www.cpubid.com). Not only does it enable you to track in real time the temperatures of all your PC's components, but it also shows you operating frequencies, voltages, fan speeds, and more. It's a great way to quickly check whether your system is overheating or throttling elsewhere; if you see temps striking above 70 C when your system is idling, it might be time to look into some cooling upgrades.

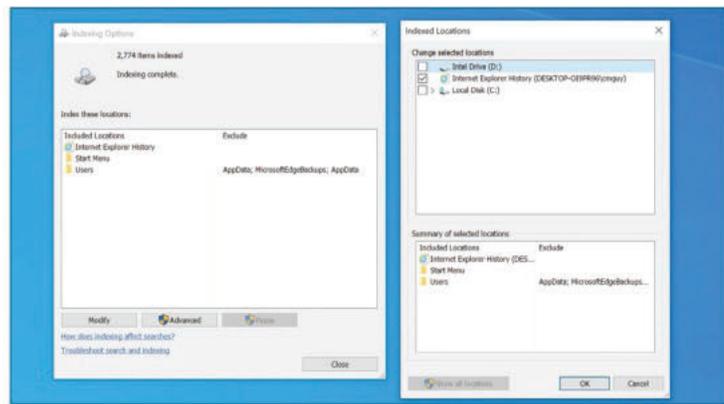
## 19 DISABLE SYNCHING

Windows 10 has a bit of a digital hard-on for synching everything; whether that's banal things such as appearance themes, or important stuff, such as passwords, search history, and cloud data. If you use Windows on numerous devices, this can be helpful; otherwise, it just puts extra strain on your system, and potentially poses a cybersecurity risk. You can shut off a number of these under "Sync your settings" in "Accounts Settings," but you might also want to disable OneDrive synching, too. To do this, you have to open up OneDrive and head into the settings, then select "Unlink this PC" under the "Account" tab.

## 20 DISABLE VISUAL EFFECTS

Look, Windows 10 is great, but it's undeniable that some areas are overdesigned. This step does come down to personal preference regarding aesthetics, but it can also be useful if you're running a system with integrated graphics

# LOW-END SYSTEM TIPS



Disabling search indexing in Windows is useful on older machines.

## 21 Use ReadyBoost

Here, we're going to specify tips that are only really useful for older or super-budget systems with limited hardware, such as HDDs instead of SSDs, or less than 8GB of RAM. ReadyBoost is a feature for such PCs, and uses removable storage (typically a USB flash drive or SD card with at least 12GB of storage) to temporarily cache data and speed up your system. You can activate it by plugging in an empty flash drive, right-clicking the drive in File Explorer, and selecting the "ReadyBoost" tab under "Properties." Select "Dedicate this drive to ReadyBoost" and reserve all available space for caching. We advise against using flash drives with data stored on them for this; while it shouldn't be a problem, it reduces the available storage space for ReadyBoost to use, and constantly caching files can reduce the drive's lifespan.

## 22 Run Defrag for HDDs

If you're still rocking an HDD in your system in 2020 (hey, we don't judge), it's important to

remember to defrag that drive now and then, lest long-term fragmentation ruins your data. Fortunately, Windows 10 has a defrag tool built-in, although it's been shuffled around a few times between version updates. Punch "defrag" into the search bar, open "Defragment and Optimize Drives," select your hard drive, and hit "Optimize." Depending on the size of the drive and the degree of existing fragmentation, it could take a while, so leave this until last if you're taking some time to clean up your PC.

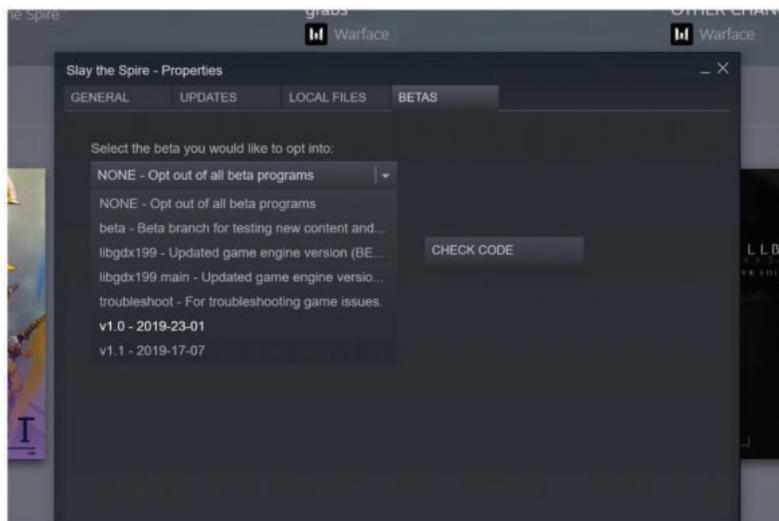
## 23 Disable Search Indexing

Windows 10's search function is great, but the indexing process can be fairly resource-intensive on older (or super-budget) systems. Access the indexing menu by searching for "indexing options" in the Control Panel, hit "Modify," then hit "Show all locations." If you want to fully disable indexing, select everything here, and click "OK." This stops Windows Search from indexing your results, freeing up system resources to speed up your PC.

that needs to keep things as simple as possible. Under the "System Properties" menu, there's a tab entitled "Advanced." Hit the "Performance settings" button on this page to open up full customization of all the visual effects baked into Windows 10. Hit "Custom" and you can tweak to your heart's content; you probably won't want to disable everything, but there are some animations here that can safely be turned off.



# OPTIMIZE WINDOWS FOR GAMING



**24** **DISABLE HARDWARE ACCELERATION ON MOUSE**  
 If you're a serious gamer, you've probably done this already. Hardware acceleration for computer mice smooths out the overall pointer experience by making your cursor move further if you move the physical mouse faster, but this can be ruinous in first-person shooters, where snap movements to aim at a target can overshoot their mark. Hop into the Control Panel and select "Hardware and Sound," then find your mouse settings. Under "Pointer Options," you can deselect "Enhance pointer precision"—this is what Windows 10 calls in-OS hardware acceleration. You can tweak baseline mouse sensitivity here, too, although we recommend doing that via the physical DPI controls on a gaming mouse.

Steam has plenty of interesting beta tools that are worth checking out.

**25** **BLOCK AUTO-UPDATES IN GAME LAUNCHERS**  
 This is a must-have, particularly if you're on a metered Internet connection. Steam is easy enough; select "Downloads" under "Steam Settings," and toggle the settings to your heart's content. In particular, we advise unchecking "Allow downloads during gameplay" if you play online games. Origin and Epic don't have quite the same array of choices, but do still allow for blocking auto-updates; Epic even allows you to tweak update choices on a per-game basis.

**26** **REVERT GAME VERSION**  
 This is a somewhat niche tip, but it can be a lifesaver if an update tanks one of your games. Steam has a beta feature—not available in every

## REACH FOR YOUR WALLET

**31** **Upgrade Your Drive**  
 SSD storage used to be expensive, but nowadays affordable SATA SSDs are commonplace. Even smaller M.2 drives (around 120GB) are quite cheap, with models from reputable manufacturers costing as little as \$25. Using one of these as a main OS drive guarantees faster boot times, and there's no need to get rid of your old drives; they can become bulk storage for files that don't need to be rapidly accessed. Note: Win 10 takes up at least 20GB, so buying a really tiny M.2 drive isn't a great plan.

**32** **More Memory**  
 If your system is running slow, upgrading the RAM can often provide that extra bit of oomph it needs. It's also one of the easiest components to upgrade, especially if your system has excess DIMM slots. For modern systems, 8GB of memory should be considered the absolute minimum amount, with 16GB working perfectly well for most tasks. If you use video-editing or rendering software on the regular, though, upgrading to 32GB or even 64GB might be a good call.

**33** **Move Beyond Integrated Graphics**  
 Rocking a new budget system with integrated graphics is no bad thing; modern APUs are great, and with Intel's 10th-gen Iris Plus chips headed to desktop (eventually), integrated graphics are in a great place right now. However, if you're still rocking an older dual-core APU, it might be time for an upgrade. That could just mean jumping up to a newer processor (such as AMD's excellent Ryzen 5 3400G), or it might mean getting a GPU. Snap up a Radeon RX 550 for under 100 bucks, or aim a little higher and snag something like an RX 570 or Nvidia's trusty GTX 1050 Ti—neither should break the bank, but will smash integrated graphics on older APUs.

*Upgrading to an M.2 drive is ideal, but SATA SSDs are still good.*

game, but it's easy to check—that allows you to roll back your game version to a previous update. Right-click the game in your library, select "Properties," and navigate to the "Betas" tab. From here, you can opt in to older versions of the game in the drop-down menu, let the game update, and boom—you're running a previous update. It doesn't work for most online multiplayer games, of course; you need to be running the same version as everyone else.

27

#### DISABLE FOCUS ASSIST

This is the big one: Get rid of Focus Assist. Have you ever been midway through a high-stakes online match, only to be yanked out of it as Windows tabs you back to the desktop to inform you that you've received an email from your co-worker? Yeah, that's got to stop. Find the "Focus Assist" tab under "System Settings," and slap it to "Alarms only"—there's no option to turn it off completely, but you can also disable it during gameplay or screen sharing. Lastly, you can deactivate the option to show you "what you missed" when you return to the desktop; an unnecessary irritant, for our money.

28

#### KEEP YOUR GPU DRIVERS UP TO DATE

Another potentially obvious tip for gamers is to keep your GPU drivers up to date. No, that doesn't mean installing GeForce Experience—the clutter-free way to do this is simply to head to the manufacturer's website and locate the most recent drivers for your GPU. Both AMD and Nvidia have handy search functions to help you find your exact GPU, and what drivers it needs. Remember to select the "Game Ready" drivers if you're using a newer Nvidia card, rather than the "Studio" version.

29

#### ENABLE GAME MODE

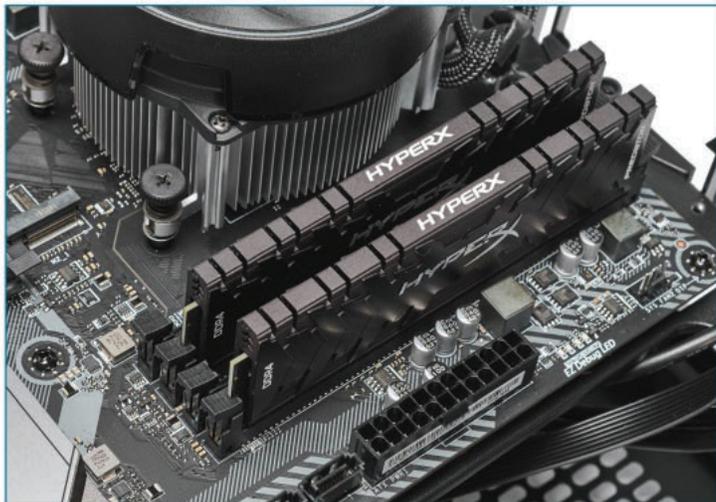
A simple change to make, although it isn't likely to improve game performance by much on most systems. Under "Gaming Settings," find "Game Mode." Make sure this is toggled on and your PC will manage temperature and available memory better to (theoretically) improve frame rates in games. While we're not sure it really boosts frame rates, it does also block Windows Update from doing anything while you're in-game. It's possible that some games see more stable frame rates—perhaps Microsoft's own stuff, as Game Mode is officially listed as an Xbox-branded tool.

30

#### INSTALL DIRECTX 12

You might already have DX12 installed, but there's an easy way to check if you do have the latest version of the widely used Microsoft API tool. Hit the Windows key and R to open the Run function, then type "dxdiag" (again, no quotes), and hit Enter. This should bring up the DirectX Diagnostic Tool; on the bottom of the page, it shows you which version of DX you have installed. If DX12 isn't installed, go check your Windows Updates!

## FAKE NEWS WHAT NOT TO DO...



While RAM disks sound cool, their applications are niche at best.

34

#### Don't Defrag an SSD

Defragmentation software can be helpful, but only for older drives. If you have a SATA SSD or M.2 NVMe drive, you don't want to try defragging it; there are no significant performance benefits (because SSDs have no moving parts, there's no risk of mechanical latency building up over time), and the lengthy defragmentation processes can actually wear out the memory cells and ruin the drive's lifespan if you do it too many times. Just don't bother.

35

#### RAM Disks Aren't That Useful

Also known as RAM drives, these nifty data storage solutions use third-party software to partition a given amount of your memory to be used as data storage instead of random-access memory. The advantages jump out immediately; RAM is a lot faster, netting you vastly improved data transfer speeds for your virtual drive. If you're moving files around a lot and only have an HDD or SATA SSD, it seems like a no-brainer. However, RAM disks are volatile memory; if your PC loses power, that data is wiped. It's necessary

to have regular automatic backups to your physical drive, and to reload the RAM disk image back into your memory every time you boot up your system, which takes time. Unless you have a staggering amount of memory to spare, it just isn't worth it.

36

#### Don't Tweak Power Plans on Desktop

Simply put: There's no point. If your PC is connected to mains power, set the power plan to high performance and call it a day. Some people will claim that there are benefits to using the other plans; we're not saying those people are wrong, but we are saying that any benefits will be practically unnoticeable.

37

#### Don't Reinstall Windows

A complete fresh install of Windows should only ever be a last resort, when other attempts to salvage your system have failed. System restore points are a more useful resource, and it's generally a good idea to have both cloud-based and physical backups of your data. Reinstalling Windows is often like bringing a broadsword to a knife fight; effective, but far too much effort and potentially messy. ⏻