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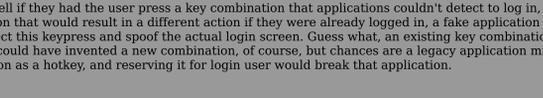
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Bill Gates Says He's Sorry About Control-Alt-Delete (40.com) Posted by BeauHD on Wednesday September 20, 2017 @07:20PM from the awkward-maneuvers dept.

An anonymous reader quotes a report from Quartz: At the Bloomberg Global Business Forum today, Carlyle Group co-founders and CEO David Rubenstein asked Microsoft founder Bill Gates to account for one of the most baffling questions of the digital era: Why does it take three fingers to lock or log in to a PC, and why did Gates ever think that was a good idea? Grimacing slightly, Gates deflected responsibility for the ctrl-alt-delete key command, saying, "clearly the people involved should have put another key on to make that work."

Amazon Is Reportedly Working On Alexa-Enabled Smart Glasses Bill Gates Acknowledges Ctrl+Alt+Del Was a Mistake Submission: Bill Gates Says He's Sorry About Control-Alt-Delete More Are Paving To Stream Music, But YouTube Still Holds the Value Gap



Bill Gates Says He's Sorry About Control-Alt-Delete 74 More | Reply Login Bill Gates Says He's Sorry About Control-Alt-Delete

Re: If I ever meet you (Score:5, Funny) by jandrese (485) <jandrese@vt.edu> on Wednesday September 20, 2017 @09:29PM (#55235727) Homepage Journal

Of course it also gave MS-DOS users pause the first time they were asked to log into a WinNT machine. "Is this a prank?"

Re: If I ever meet you (Score:5, Insightful) by rudy_wayne (414635) on Wednesday September 20, 2017 @10:11PM (#55235929) The reason they used that combo in the first place was for compatibility with legacy applications. In legacy Windows, CTRL+ALT+DEL was handled at a low level and could bring up task manager or restart the machine. Applications could not detect the keypress.

When they went to implement multi-user and logins, they realized they needed to ensure applications could not spoof the login screen to trick users into entering their credentials. A malicious application could potentially save and reuse these credentials especially if they were of a DIFFERENT user or an admin user.

What to do? Well if they had the user press a key combination that applications couldn't detect to log in, or even a key combination that would result in a different action if they were already logged in, a fake application would not be able to detect this keypress and spoof the actual login screen. Guess what, an existing key combination fit this criteria. They could have invented a new combination, of course, but chances are a legacy application might use this combination as a hotkey, and reserving it for login user would break that application.

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Re: If I ever meet you (Score:5, Funny) by jandrese (485) <jandrese@vt.edu> on Wednesday September 20, 2017 @09:29PM (#55235727) Homepage Journal

Re: If I ever meet you (Score:4, Informative) by Strider (39683) on Wednesday September 20, 2017 @10:35PM (#55236037) The whole point of Ctrl-Alt-Del was that it's protected in the BIOS. Invoking it would jump to a routine that was hard to override. In most cases, though, under DOS the subroutine just caused a reboot. Later operating systems, it was trapped for and was the one key combination that a user application couldn't map.

Re: (Score:2) by YukariHirai (2674609) There's nothing wrong with Ctrl-Alt-Del. I dunno, it seems like it'd be a bit difficult if you had the kind of accessibility issues that features like Sticky Keys were designed around. A single button that did the same thing would be a bad idea, but a two button combination would be friendlier to that and still not have all that bad a risk of being accidentally activated.

You're Both Right--History (Score:3) by SeattleLawGuy (4561077) Ctrl+Alt+Delete is a combination used for historical reasons. It is the most secure way of doing a login because it triggered an "interrupt" in the system, like a signal that could not be caught by the program running in the foreground. So programs couldn't fake the login screen. But it was an interrupt--and one that took three keys--because it was used in the old days to reboot a system with a hung program. You wouldn't WANT a computer to reboot when you pressed one key, because then a random mistaken keypre

Re: (Score:2) by Z00100K (682162) No, it was not the right solution since it did not always work, which almost everyone coding i C under MS-DOS can attest to. The computers should have had a true reset button instead, but not on the keyboard. So even when the three finger salute was created it wasn't the best solution.

Re: (Score:2) by apocfamine (621563) As an example how this is useful, back when I was in college we had an old Vax network with green terminals. Being a clever asshole, I wrote a login screen emulator, which ran from my logged-in account. It captured the login and password, popped up an "incorrect password" notice, and then logged me out, terminating the login emulator. The victim would have a slighter longer than normal delay as they got dumped back to the login prompt, but the network was dodgy enough that it wasn't totally out of the ordi

Re: (Score:3) by hey1 (33014) And in a way that makes it the last bit of user responsiveness left in a world where software acts as if it knows better. A world where you aren't considered responsible enough to have a power switch, so that in certain circumstances the only way to shut a computer off is to take it apart with a screwdriver. CTRL-ALT-DELETE may be overloaded with multiple functions, but at least the system does it's best to prioritize responding to you.

Re: (Score:2) by spitzak (4019) Yea this whole thing is silly. Ctrl+Alt+Delete was a key combination trapped by the BIOS keyboard driver in the original IBM PC and it caused the machine to reboot. This meant it worked almost all the time (it did not work if the interrupt going into the BIOS was disabled or if something was done to the keyboard hardware so that it did not produce the right key codes). It was also pretty obvious that it should be hard to type accidentally, and this was pretty common on all computers at that time. Since typing

Re: If I ever meet you (Score:2) by Evlim (1022085) Sounds reasonable to me. Why then Gates did not explain it? Has he forgotten?

That's the one?! (Score:5, Insightful) by ngc5194 (847747) on Wednesday September 20, 2017 @07:26PM (#55235013) I have a LONG list of things that I think Mr. Gates should be embarrassed about regarding Windows. The three finger salute is very, very low on my list. Reply to This Share twitter facebook linkedin Flag as Inappropriate

Re: (Score:2) by JohnFen (1641097) This was my reaction exactly.

Re: That's the one?! (Score:5, Insightful) by ShanghaiBill (739463) on Wednesday September 20, 2017 @08:01PM (#55235241) This was my reaction exactly. Actually, I think CTRL-ALT-DEL is one of the things they got right. There is little chance of doing it by accident, a dedicated button would have been a waste of keyboard real estate, and resulted in far more inadvertent resets. It actually makes sense that the decision was forced on Microsoft, and if the decision had been left up to Bill, he would have taken the dumb alternative.

Re: That's the one?! (Score:5, Funny) by defaultuser (529337) on Wednesday September 20, 2017 @08:20PM (#55235359) Journal You know, like that stupid Reset button on the Apple II. Located conveniently above the RETURN key. Can't tell you how many times I fucking hit that thing.

Re: (Score:2) by angel'o'sphere (80593) It only worked in conjunction with the ctrl-key, so why would anyone care if you hit it by accident?

Re: (Score:3, Informative) by dranga (520457) On the apple 2e and later, yes, it required the control key, on the 2 and 2+, just the reset button alone would reset the machine, and probably trash anything you were working on.

Re: That's the one?! (Score:5, Insightful) by JohnFen (1641097) on Wednesday September 20, 2017 @09:01PM (#55235593) Yes, I agree that Control-Alt-Delete is an entirely reasonable design, and I'm not sure why Gates is apologizing for it -- particularly when there are a number of other things that I think most people would agree he should apologize for. For instance -- using the backlash for directory paths when every other OS used normal slashes. As a developer, I think I curse that about once per week. Or, maybe more controversially, the registry.

Re: (Score:3) by Curtman (556920) <CR><LF> If he was involved in that typewriter hofidover, there should be a large monetary fine at the very least.

Re: That's the one?! (Score:5, Informative) by steyaha (103154) on Wednesday September 20, 2017 @11:50PM (#55236289) Homepage using the backlash for directory paths when every other OS used normal slashes You overlooked one other OS that matters here: CP/M. When MS-DOS was first developed, it was not the first DOS on the market; the majority of the business market was using Z-80 processor computers running CP/M. (Home users were on Apple II computers, mostly. Some business users used an Apple II with a CP/M card!) Anyway, MS-DOS looked and worked almost exactly like CP/M. MS-DOS programs were not that different from CP/M, I think deliberately to make it easier to port. The similarities were enough that the company that made CP/M threatened legal action over them. (Bob Zeidman checked the source code [embedded.com] and he says no stolen code was present.) Anyway, the important thing is: CP/M used forward slash as the punctuation for command-line program arguments. Thus, so did MS-DOS. And nobody was really thinking too much about directory separators because CP/M, and MS-DOS 1.x, did not have directories. They used floppy disks, and those disks just had one directory. Just a flat list of files. When MS-DOS 2.0 came out, someone was thinking of the slash for directories, because there was an actual command that you could put into your config.sys file that let you switch the character used for command-line switches. This was SWITCH and if you set it to - you also set the directory separator to forward slash. It was undocumented! It was never officially supported! And I think MS-DOS 3.0 dropped it and it never returned. (But in Windows, even today, you can just use forward slash as a directory delimiter and it works.) I think that Microsoft had the opportunity to push on this. Just say "old MS-DOS apps that are using the old APIs can continue to use forward slash for command-line switches, but any program that works with directories should use the dash. It's The New Standard." I think they could have pulled it off, with some grumbling but nothing serious. But either someone at Microsoft was timid, or else they had an argument about this with IBM and lost. I don't know. But way back in the dawn of time, compatibility with CP/M was the reason why forward slash was reserved as the command-line switch marker. P.S. I think the registry was a good idea. Having a little database to store options, and have some kind of daemon that owns it, avoids race conditions and is just good sense. However, using an opaque and fragile binary database format was insanity. They could have used a simple text-based format (like .ini files... or heck, S-expressions!) and saved the world a lot of pain. Or, at least made their binary database less fragile and documented it completely so that third parties could write registry checker tools that could fix corrupted registries or whatever. Ideally they should have used JSON for the tools, but I'm pretty sure the registry pre-dates JavaScript, let alone JSON as an interchange format.

Re: (Score:2) by JohnFen (1641097) I may be misremembering -- it was a long time ago -- but I think that the original IBM BIOS implemented the handling of Control-Alt-Delete, so it was effectively baked in. The OS could (and did) hook it, but if the OS did nothing, Control-Alt-Delete still worked. I believe this remains true to this day, which is why the key combo works even before the operating system boots.

Re: (Score:2) by TWX (665546) More to the point, just because it was used to reboot the PC, doesn't mean that it was necessary in order to trigger the OS to provide a login prompt. Other than NT-based OSes, I don't know of any OSes that required doing that. Only reason I can think of to require it is that it may be difficult to script it, so a partially infected computer can't be brute-forced terribly easily, or one cannot easily build a second computer that attempts to control the keyboard connection to another computer to attempt to b

Re: (Score:2) by Tablizer (95088) I have a LONG list of [MS gripes]. The three finger salute is very, very low on my list. For all the others, both God and I give him the one-finger salute. [nasa.gov]

Re: (Score:2) by PmanAce (1679902) Funny, your list is missing.

Re: (Score:2) by Anglencal (97333) I'd go so far as to say, it was one of the few things he got right! Of course if the software quality had made it necessary, that would be a whole different evaluation.

Re: That's the one?! (Score:5, Insightful) by Z80a (971949) on Wednesday September 20, 2017 @09:02PM (#55235597) I think hide keyboard extensions should be quite higher on the list.

Re: (Score:2) by TWX (665546) And I've got an Annie Key on my keyboard. When you press it the in-keyboard macro prints, "tomorrow, tomorrow, I love you, tomorrow..." on-screen.

Re: (Score:2) by mu1d0c1 (543661) Like no one will every need more than 128k? Remember that?

Re: (Score:2) by ArmoredDragon (3450605) Bill Gates didn't actually say that. https://en.wikiquote.org/wiki/... [wikiquote.org]

Re: (Score:2) by ArmoredDragon (3450605) Wasn't Bill Gate's brain, most likely IBM's brain: https://en.wikiquote.org/wiki/... [wikiquote.org]

Time for another book (Score:2) by SuperKendall (25149) Blaming IBM eh? Looks like it's time for another volume of "What Happened".

Re: (Score:3) by bugs2squash (1132591) Didn't the IBM guy turn around and say something like "sure you invented it, but you made it popular..."

Re: (Score:2) by Aighearach (97333) "Blaming" in the sense that Gates thought that the software so horrible it would benefit overall from having a single key to reboot, so you could easily do it by accident. If the software quality is low enough, it eventually becomes true.

Re: (Score:3) by hey1 (33014) You know, I have no interest in reading Clinton's book, but I did run into someone who did. He said (and this probably shouldn't come as a shock) that the media reports that make it sound like a vendetta book are misleading. Mostly it's campaign trail anecdotes.

Re: (Score:2) by GJK (665546) It's OK. Might be as far back as NT 3.x. Can't remember anymore. Yet I can still remember how to install a Soundblaster 16 in the MCI control panel in Windows for Workgroups 3.11.

I don't understand. (Score:5, Interesting) by xevioso (598654) on Wednesday September 20, 2017 @07:27PM (#55235201) I thought it was supposed to be a "good" thing to prevent people from accidentally restarting their machines by pressing the wrong button. From that perspective, it's a success. The fact that windows now adds a whole bunch of other options to that command, like change password, log off, lock the computer, etc, is entirely their fault; there's nothing stopping them from adding "those*" commands to another button, say an F10 or something, that allows you those options. So what is wrong with Ctrl-alt-del again?

Re: I don't understand. (Score:3, Insightful) by nine-times (778537) <nine.times@gmail.com> on Wednesday September 20, 2017 @07:38PM (#55235101) Homepage Yup. Back in the days when Ctrl-Alt-Del did an immediate soft reboot of your computer, it was really smart to not have it be a single button. Not only was it not a single button, they chose keys that were all over the keyboard, making it very difficult to press them all accidentally. If you slipped and mashed your hand down on the keyboard, there's no chance you'd just happen to hit those keys. Now, I don't know. What does it do? It opens the login screen if you're in a domain? It brings up a menu to bring up the task manager, I think? Those things could be a single button, but at the same time, I don't think we need to cram a new button onto keyboard designs just for that.

Re: (Score:2) by xevioso (598654) And in fact, Gate's quote that he thinks he made a mistake and that it should always have been a single button is actually odd. The way it would have been a disaster. There's no way to make a single button more secure than three buttons if you are trying to prevent an accidental restart. You are not trying to prevent an accidental restart. He's talking about using them to bring up the login/logout/lock/taskmanager screens. It would not be a "disaster" if there was a single key to do that. Hell.. we've had "Win-L" as a shortcut for lock for ages and nobody is really up in arms about that. Yes CTRL-ALT-DEL once upon a time was a soft reboot, but that isn't what Bill Gates is apologizing for. He's apologizing for having to press it to bring up the login screen. There is no real reason

It is a security feature (Score:2) by abeyrlas (931072) Programs cannot (could not?) trap ctrl-alt-delete. That means that it is not possible to have a rogue program get at people's passwords. If people knew only to type their password after pressing those keys. Then, in Windows 8, they gave up on it. (The password that is stored is hashed. And should have been salted.)

Re: (Score:2) by vix984 (928602) Programs cannot (could not?) trap ctrl-alt-delete. Because the operating system traps it, handles it, and does not propagate the event outwards. So it never reaches anything an application can hook into. But there is nothing stopping the operating system from trapping any other key sequence too. With USB keyboards and even bluetooth keyboards... there is NOTHING electrically special about ctrl-alt-delete now. Once upon a time the BIOS trapped the key sequence coming in on the keyboard port, and didn't even propagate it to the operating system. By the time we

Re: (Score:2) by BillyGates (198444) I like the Control ALT DELETE in this instance due to security. A lot of evil programs could PRETEND to be the userlogin prompt in order to gain usernames and password. But something like Control Alt Delete is so fundamental and disruptive that it makes it difficult if not impossible to hack short of running the OS in a VM.

The NT prompt requiring control alt delete was intentional for this reason when it was designed.

It was a reaction to the Apple II reset key (Score:5, Interesting)

by [JewelAssumpcao Jr \(15602\)](#) on Wednesday September 20, 2017 @07:50PM (#55235175) [Homepage](#)

The IBM PC was designed by observing the market leader (the Apple II with a Microsoft CP/M card) and copying all the good stuff while trying to avoid its problems. One of the problems of the Apple II was that reset was a simple key close to the return key. So it wasn't rare for you to type in stuff all night only to watch it all vanish due to a slightly misplaced finger. A popular add-on product for the Apple II was a little plastic cap for the reset key that you had to lift before you could press it. IBM selected three keys that were far enough apart than nobody would type by accident.

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Re: (Score:3)
by [drinkypoo \(153816\)](#)

And it was a good enough idea that others copied it. The Amiga had ctrl-amiga-amiga and mac had cmd-option-escape, which is difficult to hit by accident but which can be done reasonably with one hand, as long as you have the left one.

Re: (Score:3)
by [Chris Katko \(2933353\)](#)

Yeah. I've had keyboarders on client machines with a power button right next to home and delete. It's the most insane, horrific thing ever. You shouldn't be able to POWER DOWN A SERVER with a single keyboard press. You don't power down machines that often? You should't even be able to restart Windows with a single accidental press by pressing the windows key and then a couple more keys (this has happened). You don't make "high risk, low occurrence" things faster... unless you're an idiot.

I, for one, want a bu

Re: (Score:2)
by [drinkypoo \(153816\)](#)

You shouldn't be able to POWER DOWN A SERVER with a single keyboard press. That's why the power options should specify that the power and sleep buttons do nothing by default. They used to, didn't they?

Re: (Score:2)
by [tepples \(727027\)](#)

Better yet, have both the power and suspend keys pop up a dialog box to the effect "Do you want log out, shutdown, restart, or sleep?" with the default being "log out" until the user changes the setting away from "Ask" in power management settings.

Re: (Score:2)
by [tepples \(727027\)](#)

You don't make "high risk, low occurrence" things faster... unless you're an idiot. Then Google are idiots, as anyone can wipe a developer-mode Chromebook by turning it on, pressing Space as prompted, and pressing Enter as prompted.

Re: (Score:2)
by [mentil \(1748130\)](#)

This even has a [vtropes](#) page: [Caps Lock, Num Lock, Missiles Lock](#) ([vtropes.org](#))

Re: (Score:2)
by [sexconker \(1179573\)](#)

Exactly. It's as a key combination that wasn't used by something else (as far as I know) and wasn't going to be accidentally triggered. Giving them a dedicated key for it would have caused issues with accidental key presses and everyone else trying to hijack the key for other functionality. CTRL+ALT+DEL is fine. The only legit complaint I could think of is that it may be hard for people with disabilities to trigger.

Re: (Score:2)
by [Dadoo \(899435\)](#)

My problem with Ctrl-Alt-Del, especially in the DOS days, was that it was handled by software. If the currently running program wasn't using the DOS input routines or checking for the sequence, itself, it simply wouldn't work, and you'd have to power-cycle your computer to reset it. If they had actually wired up those keys to send a hard reset to the CPU, it would have been fine.

Re: (Score:2)
by [jandrese \(485\)](#)

That is not my memory at all. Ctrl-Alt-Delete worked unless your machine was *hard* locked (trapped in an interrupt handler thanks to a buggy driver or misbehaving hardware).

Re: (Score:2)
by [Dadoo \(899435\)](#)

Ctrl-Alt-Delete worked unless your machine was hard locked. Even if that's true (and I'm pretty sure it isn't), it happened all the time, and it's exactly one of the things a hard reset would fix.

Re: (Score:2)
by [Solandri \(704621\)](#)

Ctrl-alt-del generates a hardware interrupt which bypasses whatever program is running. Originally it went straight to the BIOS and triggered a reboot of the computer. But was later modified to invoke a handler attached to that interrupt. That's why it's used to initiate a login onto Windows Server. When you press ctrl-alt-del, you're guaranteed to get the real Windows login prompt (which is triggered by that interrupt). If malware has set up a fake login-like login prompt, ctrl-alt-del will bypass it

Re: I don't understand. (Score:5, Funny)

by [FrankHaynes \(467244\)](#) on Wednesday September 20, 2017 @07:39PM (#55235109)

That's a terrible thing to say about the President!!

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Don't apologize to "me" (Score:2)

by [elrous0 \(869638\)](#)

Apologize to poor old Two-Finger down at the bar!

Re: (Score:2)
by [mentil \(1748130\)](#)

He's only able to give computers the two-finger salute, it's not to be taken personally.

Compatibility (Score:5, Informative)

by [The MAZZTer \(911996\)](#) <[megaztt AT gmail DOT com](#)> on Wednesday September 20, 2017 @07:34PM (#55235071) [Homepage](#)

The reason they used that combo in the first place was for compatibility with legacy applications. In legacy applications, CTRL+ALT+DEL was handled at a low level and could bring up task manager or restart the machine. Windows could not detect the keypress.

When they went to implement multi-user and logins, they realized they needed to ensure applications could not spoof the login screen to trick users into entering their credentials. A malicious application could potentially save and reuse these credentials especially if they were of a DIFFERENT user or an admin user.

What to do? Well if they had the user press a key combination that applications couldn't detect to log in, or even a key combination that would result in a different action if they were already logged in, a fake application would not be able to detect this keypress and spoof the actual login screen. Guess what, an existing key combination fit this criteria. They could have invented a new combination, of course, but chances are a legacy application might use this combination as a hotkey, and reserving it for login user would break that application.

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Compatibility Addendum (Score:4, Informative)

by [The MAZZTer \(911996\)](#) <[megaztt AT gmail DOT com](#)> on Wednesday September 20, 2017 @07:36PM (#55235081) [Homepage](#)

I forgot to mention... I think the key combo stretched all the way back to MS-DOS, where CTRL+ALT+DEL would interrupt a reboot. I assume a 16-bit Windows trashes this combination first of all so DOS wouldn't intercept it and reboot right away, and also so they could anticipate the user was having problems and offer to run Task Manager. But the key combo was first declared in DOS as a key press that could be used to soft reset the machine, but would not be pressed accidentally. CTRL+ALT+DEL makes perfect sense for that scenario. Then it just evolved organically.

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Re: (Score:3)
by [Nonesuch \(90847\)](#)

The apology was for the choice to capture the historical "Reboot" key sequence and re-purpose it for logon. This was particularly annoying when we still had a mix of OSes in the workplace, and people got into the habit of walking up to any unknown "PC" and the first thing they do is give the 3-finger salute, rebooting the computer if it was running something other than the latest Microsoft product.

Almost as big a sin against computing as the 1994 introduction of the "Windows Key".

Re: (Score:2)
by [Tablizer \(95088\)](#)

It appears it gradually became widespread and entrenched such that nobody bothered to put a halt to it, like the parable of the boiling frog. I suspect at one point there was a conversation similar to: PHB1: What if the user or Windows locks up? How can the user end the program or reboot that? PHB2: Well, the technicians have added a secret key combo: ctrl+alt+delete for that. But that's not very user friendly.

PHB1: How about something a little easier, such as Ctrl+Esc? It's hard to bump accidentally, but easier

Re: (Score:2)
by [Trax301BBS \(2368736\)](#)

The reason they used that combo in the first place was for compatibility with legacy applications. In legacy Windows, CTRL+ALT+DEL was handled at a low level and could bring up task manager or restart the machine. Applications could not detect the keypress. The way they sold it for the NT was the key combo terminated any TSR's (an old DOS term for Terminate and Stay Resident). Only had 640K memory to use, any little bit helped.

killer death button (Score:2)

by [bugs2squash \(1132591\)](#)

so where was this single NMI button supposed to go - right next to the enter key I suppose.

Besides, it's not as if c-a-d gets my PC's immediate attention anyway. I can sometimes wait 10 minutes after I hit it, unless I get impatient and hit the power button. If the machine is doing OK then Billy could have poked any key to get its attention, when things go wrong the Non-Maskability of the interrupt doesn't seem to do the trick reliably

Re: (Score:2)
by [PopeRatzo \(965947\)](#)

so where was this single NMI button supposed to go in between TAB and CAPS LOCK.

Re: (Score:2)
by [drinkypoo \(153816\)](#)

If the machine is doing OK then Billy could have poked any key to get its attention, when things go wrong the Non-Maskability of the interrupt doesn't seem to do the trick reliably C-a-D was probably never a NMI. It's serviced by a DOS interrupt handler (INT 17 IIRC) and thus you could always change the behavior. I'm not absolutely sure the original IBM PC didn't get a real IRRPT from the keyboard controller, though.

Pretty dumb answer (Score:4, Interesting)

by [angelosphere \(80593\)](#) on Wednesday September 20, 2017 @07:42PM (#55235123) [Journal](#)

"Sure, if I could make one small edit I would make that a single key operation."

On an Apple II we had a reset key. However it only would work in conjunction with the CTRL key.

Why? So you can not hit it by accident and cause a reboot.

Basically every Workstation, Mini Computer, uses a 2 or 3 key combo which REQUIRES BOTH HANDS, so it can not be triggered by accident. Is ctrl/alt/del a good combo? No idea, never cared.

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Re: (Score:2)
by [sdeimos \(632778\)](#)

On an Apple II we had a reset key. However it only would work in conjunction with the CTRL key. That's not quite right. On the Apple II+ and later you needed to use the CTRL key as well. Starting with Apple IIe series 2 (with the Open and Closed Apple keys) it was CTRL-OpenApple-Reset or CTRL-ClosedApple-Reset for diagnostics. On the original Apple II, though, just the reset key was enough and was quite annoying.

The reason (Score:3)

by [supernous87a \(532540\)](#) <[moc.liamtoh \(t\) \(relpe\)k](#)> on Wednesday September 20, 2017 @07:51PM (#55235181)

I thought the point of Ctrl-Alt-Del was that it generated a system-level interrupt that no other program would be allowed to supercede (I'm assuming the exact terminology wrong here probably, but the point is), and only the operating system would be get a user to put in a password on the familiar login screen.

Otherwise, malicious or other programs might be able to spoof the login screen and capture a users credentials.

Good thinking, but it just led to some convoluted keyboard contortions as a result.

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Re: (Score:3)
by [JohnFen \(1641097\)](#)

I thought the point of Ctrl-Alt-Del was that it generated a system-level interrupt that no other program would be allowed to supercede. It generates a non-maskable interrupt. However, under the IBM architecture, it has always been possible to install your own handler for that interrupt (and it's always been possible to mask it).

Re:the reason (Score:4, Informative)

by [drinkypoo \(153816\)](#) <[martin.espinosa@gmail.com](#)> on Wednesday September 20, 2017 @08:03PM (#55235259) [Homepage](#)

It's called a NMI, or non-maskable interrupt... except... it actually isn't one of those, at least not at the hardware level. There's no line dedicated to it on the keyboard bus. It might have been way back in the way back when the keyboard controller was a big fat DIP IC.

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Re: (Score:2)
by [JohnFen \(1641097\)](#)

It's called a NMI, or non-maskable interrupt... except... it actually isn't one of those, at least not at the hardware level. Well, at the CPU level, it really is a non-maskable interrupt. The CPU interrupt mask can't mask it. But the usual IBM-style architecture runs the interrupt line through an external interrupt controller before it goes to the CPU, and it can be masked by that.

caps lock is by far the bigger evil (Score:2)

by [zr \(19885\)](#)

back in my dos/windows days (long ago) i didnt mind ctrl-alt-delete at all, frankly dont see why people make a big deal of it.

Uh.. (Score:2)

by [fluffarmutter \(1411889\)](#)

So the key sequence that halts everything and restarts no matter what should be EASY to hit accidentally?

"Didn't want us to give our single button" (Score:2)

by [K. S. Kyosuke \(729550\)](#)

Bill, your wish has almost come true anyway. [[www.mrk.cz](#)]

I like it (Score:2)

by [gravenwax \(4727409\)](#)

I'm not sure I like the Ctrl-alt-delete sequence. It is a system interrupt, the 3 key combination means you are not likely to accidentally hit it. It isn't a particularly onerous combination and the combo harkens back to when it used to be a reboot (definitely something you don't want to accidentally do).

Not talking about reset sequence (Score:2)

by [Octorian \(14086\)](#)

It's pretty clear from the abstract that they're *not* talking about Ctrl-Alt-Del as the sequence for resetting the computer. Rather, they're talking about Ctrl-Alt-Del as the non-app-trappable sequence for triggering certain behaviors in Windows NT (login prompt, etc.). In that context, a single button actually would have been fine. Of course this is Slashdot, so everyone is ignoring that and just skipping to assuming it was the former :)

Re: (Score:2)
by [sdeimos \(632778\)](#)

Rather, they're talking about Ctrl-Alt-Del as the non-app-trappable sequence for triggering certain behaviors in Windows NT (login prompt, etc.). If, by "non-app-trappable" you mean that a Windows application couldn't intercept it you're almost correct. The Control-Alt-Delete key combination was actually baked into BIOS and caused the system to jump to the Reset Vector to start the initialization/reboot sequence. Windows itself was actually grabbing the Reset Vector to prevent this behaviour but in earlier versions of Windows applications could still steal it away from Windows to run their own code. I think they only fixed this with the Windows NT 4.

SysRq. It's still there, but much forgotten. (Score:2)

by [zephyvark \(1812804\)](#)

You're all missing out on something. There is a SysRq key, generally remembered for... actually, it isn't remembered much at all. BUT, the purpose was to be an intentional out-of-the-way key that did System Requests. AKA, things like reboots and shutdowns. It has very rarely been used by anyone or anything at all, because neither Microsoft nor IBM ever got around to figuring out why they put this odd key on the keyboard in the first place. It might do something if you have some antiquated KVM switch (keyboard

Re: (Score:2)
by [OrangeTide \(124937\)](#)

And the scancode for SysRq is a lot easier to detect in an OS or BIOS than many other extended keys and easier than combinations with multiple modifiers like Ctrl-Alt-Del. While on a modern AT keyboard SysRq is Alt-PrtScr, the controller still sends a single byte scancode back (0x54). It's something IBM invented and was mostly ignored by mainstream software vendors like Microsoft. And I believe it was mapped to its own INT handler in PC BIOS, so it should have been easy for an OS to latch onto.

Windows keys are

Re: (Score:2)
by [SEE \(7681\)](#)

Hmm? Microsoft and IBM knew exactly why IBM put it on the new keyboard for the PC/AT -- to signal "CP-DOS"/"Advanced DOS"/"286 DOS"/"MT DOS"/"DOS 5", the new OS that was going to take full advantage of the 286's protected mode, through whatever program might happen to be running. Because one thing that was sure was that no pre-AT software was going to be listening for a key that didn't exist, while any other key or key combo might have already been hijacked.

And if you can get your hands on one of the pre-

Not to lock it (Score:2)

by [Troggs \(513942\)](#)

WIN+L will do that just fine.

Bill Gates didn't invent ctrl-alt-delete .. (Score:2)

by [khz6955 \(4502517\)](#)

First off Bill Gates didn't invent ctrl-alt-delete. That honor goes to David Bradley of the original IBM PC design team. The primary use of which is to perform a warm-boot of DOS, as that particular combination is hardwired into the IBM PC BIOS. In Windows NT it caused the NT login screen to be displayed. Given the quality of security in WinNT it was the only way to be sure you weren't running a fake login screen.

Bad Answer Bill (Score:2)

by [pubwvj \(11045960\)](#)

"I would make that a single key operation."

Wrong answer, Bill.

By making it a little hard to do you reduce the chances of it accidentally being done. Control-Alt-Delete is a good choice. Adding a single function key to the keyboard just for that would be a VERY BAD choice as it would waste space and make errors more likely. (Remember, space is infinite so don't waste it.)

MS copied it from Apple (Score:2)

by [UnknownSoldier \(87820\)](#)

"We could have had a single button, but the guy who did the IBM keyboard design didn't wanna give us our single button. IMHO it wasn't a mistake. On the Apple II there was a RESET button.

On the Apple II+ it was changed to CTRL-RESET because it was too easy to accidentally trigger a single button. With the Apple IIe a third button was added: CTRL-Open Apple-Reset for a built-in ROM test.

Of all the "mistakes" with Windows, Bill picks this one???? And not the retarded 8.3 filenames when an Apple II had 30, c

hes a master of time now? (Score:2)

by [n3r0_mdskillz \(447312\)](#)

"You can't go back and change the small things in your life without putting the other things at risk," Gates said. That sounds suspiciously like something a retired time traveller would say...

What about the existing key? (Score:2)

by [Todd Knarr \(15451\)](#)

Sure. If I could make one small edit I would make that a single key operation. Why not use the Alt-SysRq key that was on the original PC keyboard? It even had the advantage of being tied to a dedicated interrupt so a locked-up keyboard driver wouldn't block the key. Can't argue that the key wasn't there, it was there from the very start and intended for just this use (secure attention signal).

I'd even go so far as to question whether it's a problem. Logging on or unlocking a computer are things done relatively

Not *ANOTHER* key! (Score:2)

by [freeze128 \(544774\)](#)

Jesus! We don't need another key on our keyboards. It's already Bill's fault that we have 105 key keyboards instead of 101 key keyboards. When you HAD to have that silly windows key. And what was it good for? Throwing you out of your FPS game as he just accidentally pressed it.

I suppose Bill would want a separate key for login, and then one to logout, and then one to open the control panel, one for Internet Explorer, one for email, etc...

We already had keyboards with all that crap on it - I'll stick with th

Re: (Score:2)
by [Presence Eternal \(56763\)](#)

Er, hitting the windows key while gaming would crash or lock up the system. Left that part out.

Re: (Score:2)
by [JohnFen \(1641097\)](#)

What's wrong with Alt-F4? I use it all the time.

Re: (Score:2)
by [drinkypoo \(153816\)](#)

You can't argue that? Why is Alt-F4 still available to shut down programs and log off Windows. It's been there since Windows 1.0. Maybe then it made sense, but why now? I use Alt-F4 all the time. If you're annoyed that it's still in windows you'll be really pissed off if you ever use a Linux desktop, they all seem to use it as well. Inertia, it's what's for dinner.

Re: (Score:2)
by [YukariHirai \(2674609\)](#)

You want another? Why is Alt-F4 still available to shut down programs and log off windows.

Because keyboard shortcuts are a good thing to have. Sure, I could use the mouse to close a window. I could use the mouse for a lot of the things I use the keyboard for, but it would be much less efficient.

Re: (Score:2)
by [Niorthbjatr \(3776975\)](#)

Linux has kernel panics too.

Re: (Score:2)
by [markdavis \(642305\)](#)

>"Linux has kernel panics too."

While that is true, it has happened to me only a few times in dozens of years. From my observations, it was perhaps 1% of what MS-Windows users were experiencing. In any case, the problem with A-C-D to reboot was not a problem under MS-DOS, or even MS-Windows until MS decided to use it to "log on" in "multiuser" mode, which was really quite stupid. No other multi-user system required such an arcane and ridiculous key sequence for a login. Not only was it inconvenient, it

Re: (Score:2)
by [drinkypoo \(153816\)](#)

While that is true, it has happened to me only a few times in dozens of years. From my observations, it was perhaps 1% of what MS-Windows users were experiencing. Try doing the same stuff people do in Windows on Linux, like hardcore gaming. Most BSDOS are failure of the graphics driver (typically IRLD, something or other) and most of them happen when stressing it.

Back in the Windows 3.x days, and also in the Windows 9x days, windows stability was embarrassing. In fact, Windows NT 4 was embarrassingly unstable as well, in a way that 3.51 was not. However, it also supported USB and disks larger than 2GB, so people had little choice but to "upgrade". But they merged memo

Re: (Score:2)
by [ArchieBunker \(132337\)](#)

NT didn't support USB. I recall having so many issues with Windows 95 and when I finally installed NT4 everything suddenly worked like it was supposed to.

Bad drivers cause stops (Score:2)

by [tepples \(727027\)](#)

Linux panics less often than Windows stops in part because Linux kernel developers maintain their own drivers. It's traditional for Linux-friendly peripheral makers to contribute their kernel-mode drivers upstream. Microsoft, on the other hand, delegates most driver development to hardware makers, who are obligated to pay a code signing CA trusted by Microsoft, but aren't obligated to provide source code to Microsoft. This means defective drivers end up in widespread use, and driver defects are the single bi

Re: (Score:2)
by [YukariHirai \(2674609\)](#)

The drawback here is that desktop Linux gets less attention from hardware makers, particularly those who are more possessive about their trade secrets, than Windows. The argument can be made that it's better to have less hardware that works but what does work doesn't crash the machine, rather than everything working but have a quarter of it capable of causing a crash.

Another angle is that a fair bit of hardware out there doesn't have drivers for current versions of Windows, but once drivers get into Linux they stay in Linux. For example, a sound card I have worked in WinXP but not Win7 still works just fine in Linux.

Re: (Score:2)
by [Athebeach \(97333\)](#)

I remember a time when I was young and my desk was so cluttered there was nowhere to set down my coffee when the app froze, and I had to three-finger with two fingers and my nose. Surely it is more convenient than putting random items in your mouth?

Re: (Score:2)
by [OrangeTide \(124937\)](#)

Every time I want to log into my multimedia box while eating a sandwich.

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Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing had happened. -- Winston Churchill

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