IT@Intel Technology Tips

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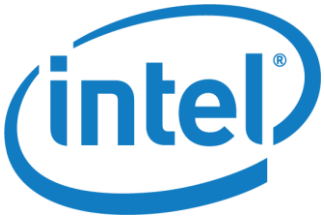

Intel IT creates and publishes articles for Intel employees to educate them on a variety of information technology subjects. Our goal is to help them improve productivity, take advantage of new IT services and raise awareness on other IT topics of interest. We've modified these articles from their original version for sharing with external audiences.

How to protect your handheld device or laptop from water damage

Contact with liquid is not the end of your smartphone or PC

A TV ad shows a woman seated at a local coffee shop, surfing the web on her laptop for a last-second gift. A passer-by bumps the table and knocks the woman's hot coffee onto the computer.

If this has ever happened to you, you probably think it's time to buy a new handheld or computer.

Not so fast. While no computer or handheld is impervious to water or other liquids, you might be able to bring your workhorse device back from near-death in a few easy steps. It will take you about a day or so, but it could be worth the effort.

Here's what to do after a liquid-based accident involving your handheld or laptop.

Figure 1: When a cell phone is wet, you have only a few seconds to dry it off before water seeps inside.

Resurrecting a smartphone or cell phone

In the popular crime scene/criminal investigation-type television shows, there's always an episode where a murder victim's phone is found in a swimming pool. The phone contains vital information to solving the murder, and the detectives somehow manage to dry the phone off and get it running again. Sound impossible? Not really. Here's how to bring your handheld back from a watery demise:

- Get it out of the water as soon as possible. Plastic covers on cell phones are fairly tight, but water can still enter the phone within 20 seconds or less (see Figure 1).

- **Remove the battery.** Many circuits inside the phone will survive immersion in water if they are not attached to a power source when wet.
- **Remove the SIM and memory cards, if your phone has them.** SIM and memory cards survive water damage well, as long as you don't heat them. Just pat them dry with a paper towel and set them aside until you need to reconnect your phone to your cellular network.
- **Remove any covers and external connectors.** This will open up as many gaps, slots, and crevices in the phone as possible to allow for more thorough drying.
- **Get the water out.** Carefully shake the phone without dropping it, then use a cloth towel or paper towel to gently remove as much of the remaining water as possible. Dry excess moisture by hand.

Figure 2: A vacuum cleaner can draw moisture away out of your phone, but only from a distance – too close, and the resulting static will do more harm than good.

- **Rinse carefully.** If your phone falls into the ocean or another form of salt water, rinse it with fresh water before salt crystals can form in the phone after removing the battery.
- **If possible, use a vacuum cleaner.** This will remove all residual moisture by drawing it away from internal circuitry. Hold the vacuum at least two inches away over the affected (and accessible) areas for up to 20 minutes (see Figure 2) to avoid problems with static.
- **Use a can of compressed air.** Hold the air can straight up (holding it upside down, sideways, or at an angle will shoot out the customary freezing liquid) and shoot into the crevices, speaker, microphone, and keypad. Any excess water should come out.
- **Use a water-soaking substance water to help draw out moisture.** An overnight dry "soak" in a bowl or bag of uncooked rice or desiccant gel works well.

- Let the phone sit on absorbent towels, napkins, or other paper. Check the absorbent material every hour for four to six hours. If moisture is evident, change cloth or paper and continue to let the phone sit.
- Test your phone. After you have waited a day or so, make sure everything is clean and looks dry. Then reinsert the battery and try turning it on. If your phone does not work, try plugging it into its charger without the battery.
    - If your phone works, you need a new battery.
    - If not, take your cell phone to an authorized dealer. Don't try to hide the fact that it has been wet—internal indicators will prove the presence of moisture.

Figure 3: Many laptops have died untimely deaths due to unexpected spills.

A second life for your laptop

Even though most laptops now have sealed keyboards to keep fluid from leaking into the computer circuitry (or at least slow its progress for up to an hour), spills are still one of the major causes of laptop deaths (see Figure 3). Here's how to minimize damage if a spill occurs.

If it's water you're dealing with:

- Immediately turn off the machine. If necessary, do a hard shutdown by pressing and holding the power button.
- Use a soft cloth to blot up—not wipe up—excess liquid. A wiping motion will merely push the liquid around.
- Remove any external cables, drives, network cards, and bays. Blot up liquid that may have gotten onto the removable media.
- Don't take apart the casing. This can damage internal components and void your warranty, if applicable.
- Tilt the laptop gently from side to side to allow liquid to drain out. Do not shake the machine.
- Turn the laptop upside down to drain remaining excess liquid (see Figure 4).

Figure 4: The key to saving your laptop after a spill is to drain it of as much moisture as possible. This will mean a lot of waiting for natural evaporation to take its course.

- If you have one, use a blow dryer on the coolest setting and carefully dry the keyboard and any parts you have removed. Keep the dryer moving over all parts.
- Let the laptop air dry upside down for at least one hour; 24 hours is preferred.
- When the laptop is dry, reattach any removable components and start up the machine.

- If it starts with no problems, test-run several programs and try using the external media.
- If you see sparks or smell any foul odors, immediately power down the system. Take the unit to a repair specialist.

If you're dealing with a sticky or residue-based spill such as soda, juice or coffee:

- Follow the above procedures, but carefully clean the surface of the unit after initial drying. Use a lightly damp, soft cloth with a diluted, 50-percent solution of isopropyl alcohol or watered-down window cleaner, a non-abrasive brand name cleaner or professional keyboard cleaner.
- Don't forget to clean the touchpad in similar fashion.
- Turn unit down and let it air dry for at least an hour; a day is preferred.
- If necessary, take the unit to a repair specialist.

Remember to back up your laptop's contents following the spill. Even if you successfully revive it, the machine may be on borrowed time and could malfunction in the future.

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