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The Darker side of testing

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WELCOME TO THE DARK SIDE

Why do we test?

The Mars Climate Orbiter doesn't orbit

Back in physics class, our teachers leaped all over answers that consisted of a number. If the answer was 2.5, they'd take their red pens and write "2.5 what? Weeks? Puppies? Demerits?" And proceed to mark the answer wrong.

Back then, we thought that they were just being pedantic. But it's the kind of error that can burn up a $327.6 million project in minutes. It did in 1998, when the Mars Climate Orbiter built by NASA's Jet Propulsion Laboratory approached the Red Planet at the wrong angle. At this point, it could easily have been renamed the Mars Climate Bright Light in the Upper Atmosphere, and shortly afterward been renamed the Mars Climate Debris Drifting Through the Sky.

There were several problems with this spacecraft -- its

WHAT READER

Resilience in the Face of Disruption: Viewpoint on the CrowdStrike Incident in July 2024

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Abstract

In an era where health care is increasingly dependent on digital infrastructure, the resilience of health IT systems has become a cornerstone of patient safety and operational continuity. As cyber threats grow in frequency and sophistication, health care organizations have turned to advanced cybersecurity tools to safeguard their systems. Yet even the most robust defenses can falter. On July 19, 2024, a routine update from a widely used cybersecurity platform triggered a widespread IT disruption. A flawed sensor configuration led to 8647 "blue screen of death" (BSOD) events, with 729 devices requiring manual remediation. What unfolded was not just a technical crisis but a test of organizational agility, collaboration, and resilience. This viewpoint traces the response to that disruption, highlighting the pivotal role

Deadly radiation therapy

The Therac-25 medical radiation therapy device was involved in several cases where massive overdoses of radiation were administered to patients in 1985-87, a side effect of the buggy software powering the device. A number of patients received up to 100 times the intended dose, and at least three of them died as a direct result of the radiation overdose.

Another radiation dosage error happened in Panama City in 2000, where therapy planning software from US company Multidata delivered different doses depending on the order in which data was entered. This resulted in massive overdoses for some patients, and at least five died. The number of deaths could potentially be much higher, but it is difficult to know how many of the 21 who died in the following years did so as a result of their cancer or ill effects from the radiation treatment.

Rocket launch errors

In 1996, a European Ariane 5 rocket was set to deliver a payload of satellites into Earth orbit, but problems with the software caused the launch rocket to veer off its

What if testing goes wrong

Case 1:”Captain, we have a problem”

Case 2:”And the crowd goes wild..”

Case 3:”mailbom, mailbom, you’re my mailbom”

Case 4: “The need for speed”

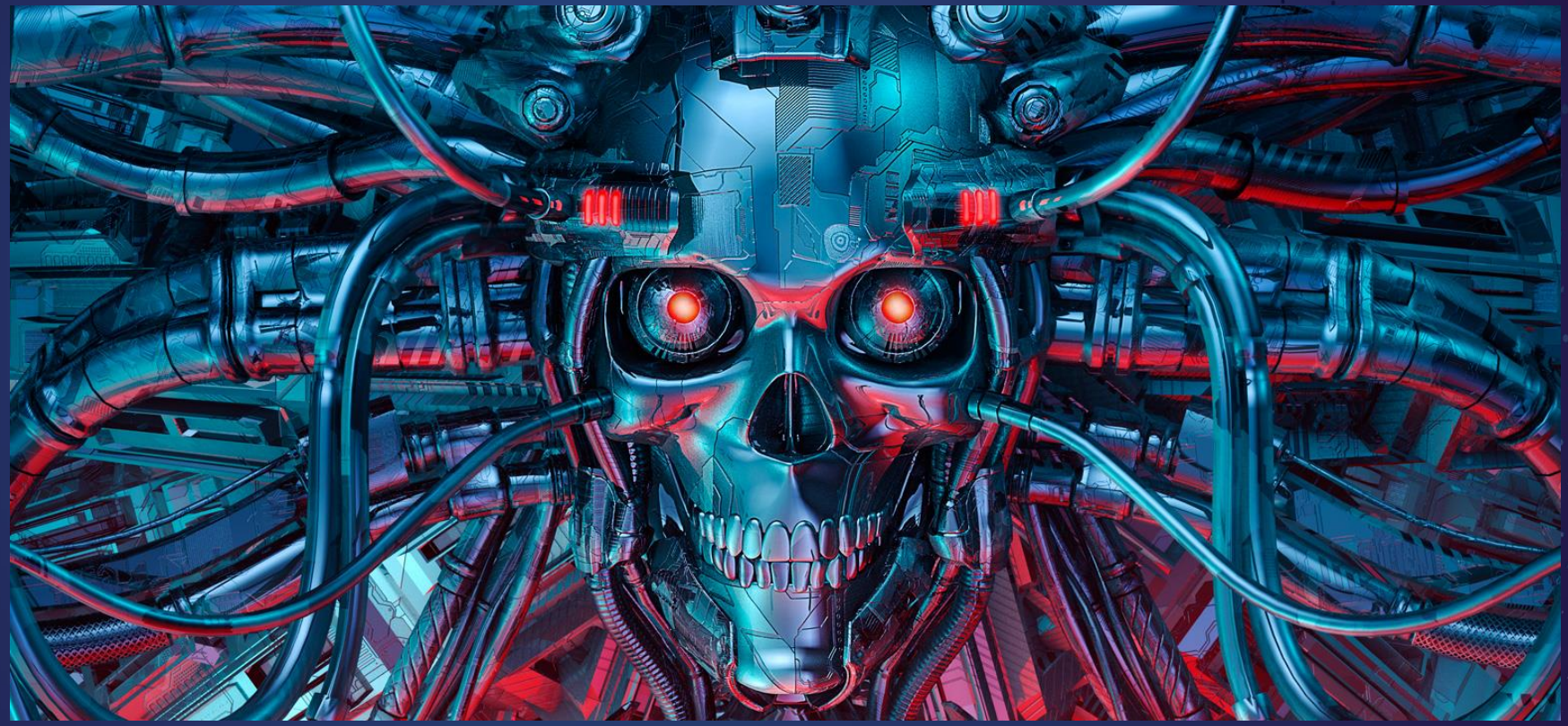
Case 5: “Barbados, here I come”

Case 6: “But I am still alive?!”

Case 7: “Ahhh, THAT’s how they do it!”

Case 8:” Sorry Mister Gates, your creditrating has dropped”

Case 9:”The (un)unteachables”



Lessons learned

- Testing in production
- Production/Test confusion
- Separation of test and production facilities
- Configuration management
- Production data in testing environments
- Barricade the frontdoor, but leave the backdoor open.

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Thank you!