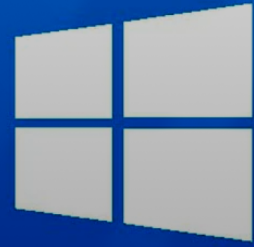




Your PC ran into a problem and needs to restart. We're just collecting some error info, and then we'll restart for you.

20% complete



For more information about this issue and possible fixes, visit <https://www.windows.com/stopcode>

If you call a support person, give them this info:

Stop code: CRITICAL_PROCESS_DIED

CrowdStrike's Impact on the Fortune 500

An Impact Analysis

Introduction

Major corporations today rely on cloud services as a cornerstone of trading, especially those within the Fortune 500. The shift from traditional, on-premise computing systems to cloud-based services like SaaS, PaaS, and IaaS has transformed the systemic cyber insurance risk. The recent global outage of CrowdStrike, a system utilized by more than half the Fortune 500, showed this starkly¹.

In our previous event analysis, [The Cloud's Role in the Global CrowdStrike Outage](#), Parametrix explained how the incident unfolded, and emphasized the role of the cloud as the catalyst for its widespread impact. This finding is substantiated by our analysis of the event's impact on the Fortune 500.

Our unparalleled insight into the financial impact of the CrowdStrike event is based on:

- more than 54 billion data points, which together define the historical performance of cloud services,
- extensive expertise in system failures and business interruption losses, and
- direct monitoring of the real-time service status of 6,000 leading technology businesses, including a significant portion of the Fortune 500.

These assets allowed us to perform in-depth analyses, and to assess accurately the financial repercussions of outages such as the recent CrowdStrike incident. Parametrix models and our infrastructure analysis tool, Infrasight, deliver unique value by providing detailed, actionable insights that help (re)insurers and businesses understand and mitigate the risks associated with cloud service disruptions.

We chose to focus on the Fortune 500 because this group of companies is a key driver of the global economy, and has been a reliable indicator of overall market impacts of events. The cohort includes some of the most significant technology service providers, such as IBM, Alphabet, and Salesforce. When an outage of CrowdStrike's magnitude affects such companies, a ripple effect causes interruptions for other enterprises, those reliant on the affected company's services. Most of the Fortune 500 purchase cyber insurance, but are typically under-insured for cyber and business interruption (BI) risks. In contrast, SMEs' cyber limits are primarily driven by third-party liability, so they are often over-insured for BI risks.

¹ <https://fortune.com/2024/07/22/crowdstrike-global-outage-small-businesses/>

Executive Summary

Overview

The recent global CrowdStrike outage had a significant impact on the 2023 Fortune 500 companies, disrupting approximately 25% of them, leading to direct financial losses and operational delays. The event highlights the critical dependency of major corporations on cloud services, and the systemic risks posed by such disruptions.

Key Findings

- **Affected Companies:** About 25% of Fortune 500 companies experienced disruptions due to the CrowdStrike outage.
- **Industry-Specific Impacts:** The most heavily impacted industries were Airlines, Healthcare, and Banking. Notably, 100% of the Transportation-Airlines sector was affected.
- **Opportunities for Risk Diversification:** The Software & IT-related Services sector, excluding Microsoft, was less impacted, suggesting that (re)insurers can better manage risk by diversifying portfolios to include industries that rely on different service providers.

Financial Loss Assessment

- **Estimated Financial Loss due to the CrowdStrike outage:** Parametrix estimates a total loss of **\$5.4 billion** for the Fortune 500, excluding Microsoft.
- **Industry Loss Distribution:** The Healthcare sector faces the highest losses, followed by Banking and Airlines.
- **Insured Loss Estimate:** Insured losses are expected to fall between **\$0.54 billion** and **\$1.08 billion**, representing 10%-20% of the total financial loss.

Impact on Global Operations for the Fortune 500

Incident fallout was felt across various industries. Beyond direct financial losses, critical services were impacted, causing a cascade of operational delays that affected the Fortune 500 and their downstream entities. Table 1 breaks down the impact rate among the Fortune 500 by industry.

The industries most impacted include Airlines, Healthcare, and Banking. Software & IT-related Services (excluding Microsoft) are, in contrast, one of the least affected. This could be viewed as a silver lining, because a high impact on this sector would have resulted in an even larger ripple effect, given this sector includes some of the largest service providers in the world.

The industry impact distribution reveals an opportunity for cyber (re)insurers to achieve portfolio diversification among industries that are less likely to use the Microsoft Windows Operating System (OS). The Software & IT-related Services sector predominantly deploys the Linux OS in their cloud Virtual Machines, which is evident in the reports from SaaS, PaaS, and IaaS companies monitored by Parametrix (Figures 1 & 2). Diversification on this line would reduce the risk of widespread impact from future events similar to the CrowdStrike outage.

Table 1: Fortune 500 Impact Rate by Industry

Industry Sector	No. of Companies	No. of Impacted Companies	Impact Rate
Transportation - Airlines	6	6	100%
Banking	21	16	76%
Health	40	30	75%
Retail/Wholesale	75	32	43%
Transportation - Other	15	6	40%
Finance	28	8	29%
Software & IT related Services	24	5	21%
Other	160	15	9%
Manufacturing	130	6	5%
Total	499*	124	25%

Source: Parametrix Impact Analysis: CrowdStrike's Impact on the Fortune 500
 *The analysis excludes Microsoft because they were a key player in the event

The figures below are derived from Parametrix's real-time monitoring of more than 6,000 Software & IT-related Services Companies' service status reports.

As shown in Figure 1, on a regular workday we see around 300 companies report a service interruption. That provides a baseline with which to compare the impact of a specific outage event. The increase, to 419, in the number of companies reporting an interruption on July 18, is due to an outage of the Microsoft Azure cloud in the Central US region.

On the day of the CrowdStrike outage, the impact on Software & IT-related Services is clear, with 700 among the monitored companies reported service interruptions. However, previous major outage events have had a greater

impact. Some incidents have led to service interruption reports by more than 1,000 companies. This shows that Software & IT-related Services are not reliant on CrowdStrike, and reinforces the ability of (re)insurers to diversify by granting coverage to companies from various industries, since their reliance on different service providers varies by sector.

On a regular workday, around 18% of the companies that reported a service interruption classified that interruption as critical (Figure 2), providing a baseline for regular operations. During the CrowdStrike outage, the share of companies that reported a critical interruption increased to 39%. This indicates that companies affected by this event were impacted more severely than usual.

Figure 1: Number of Companies Reported by Day, July 8-22 2024

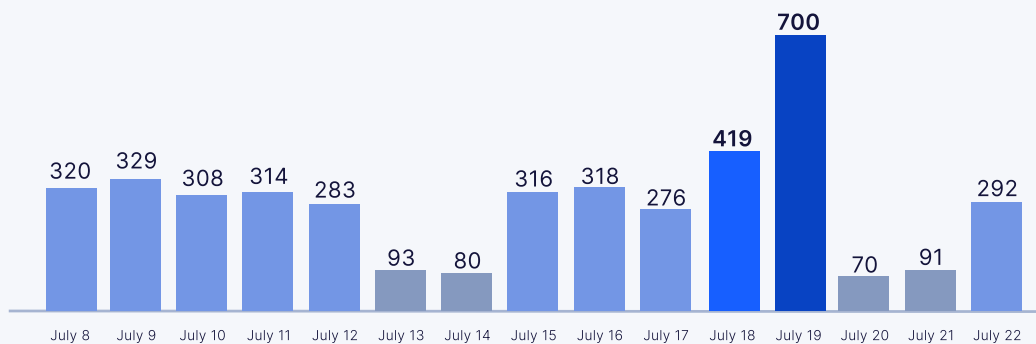
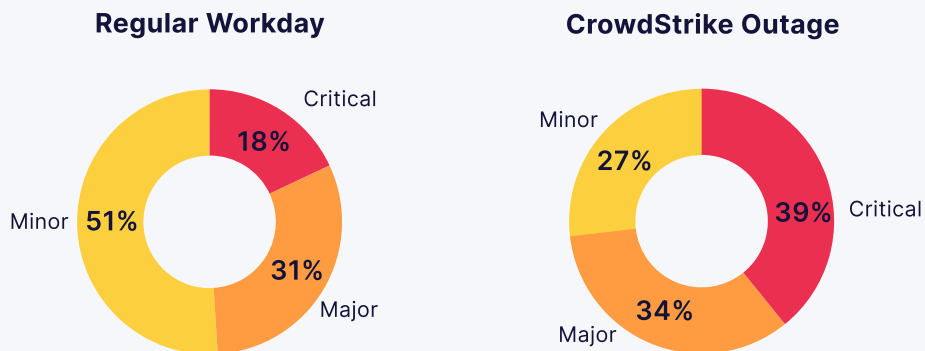


Figure 2: Distribution of Company Reports by Severity Level



Source: Parametrix Impact Analysis: CrowdStrike's Impact on the Fortune 500

Parametrix Financial Loss Model

Based on Parametrix financial loss model, we estimate a direct financial loss for the Fortune 500 of \$5.4 billion (excluding Microsoft), distributed among industry sectors as follows:

Table 2: Fortune 500 Financial Loss by Industry

Industry Sector	Annual Revenue, All Companies	Annual Revenue, Impacted Companies	Estimated Direct Financial Loss	Estimated Direct Financial Loss, per Company
Health	\$2.77T	\$2.24T	\$1.94B	\$64.60M
Banking	\$0.82T	\$0.74T	\$1.15B	\$71.84M
Transportation - Airlines	\$0.19T	\$0.19T	\$0.86B	\$143.38M
Software & IT related Services	\$1.71T	\$0.89T	\$0.56B	\$112.59M
Retail/Wholesale	\$2.89T	\$0.73T	\$0.47B	\$14.73M
Other	\$5.15T	\$0.95T	\$0.19B	\$12.60M
Finance	\$0.68T	\$0.17T	\$0.14B	\$17.21M
Transportation - Other	\$0.36T	\$0.26T	\$0.07B	\$11.10M
Manufacturing	\$3.37T	\$0.31T	\$0.04B	\$5.93M
Total	\$17.94T	\$6.47T	\$5.41B	\$43.64M

Source: Parametrix Impact Analysis: CrowdStrike's Impact on the Fortune 500

Some industries, such as Software & IT-related Services, are more likely to cause a ripple effect beyond Fortune 500 companies. This effect is not quantified in the current analysis, so overall impact is likely to be higher due to operational disruption factors that were not taken into consideration.

Based on past studies, we calculate that the ratio of insured loss to financial loss is typically in the range of 10% to 20%. This is due to large risk retentions and low policy limits of large companies relative to potential outage losses. Therefore, the insured loss ranges from \$0.54 billion to \$1.08 billion.

Conclusion

1. Recovery disparities between cloud and traditional infrastructures: Traditional industries that rely heavily on physical computers took longer to recover from the CrowdStrike outage, relative to those with cloud-based infrastructures. This highlights the inherent resilience and rapid recovery capabilities of cloud-based systems, making a strong case for their adoption in critical operations.

2. Misplaced priorities: The focus of risk management on non-systemic cyber perils was ultimately a catalyst for the CrowdStrike outage. A protective measure was unconsciously a risk aggregator, and in effect amplified its impact.

3. Achieving portfolio diversification: Cyber (re)insurers can effectively manage systemic risk through strategic diversification across different industry sectors, service providers, and company sizes. By diversifying dependencies, companies can reduce their exposure to similar future events.


4. Distinct impact-profile of the CrowdStrike outage: The impact of the CrowdStrike outage is notably different from outage events interrupting service providers such as AWS, Azure, and GCP. This is due in part to the unique mix of users that deploy CrowdStrike systems both on-premises and through cloud infrastructure. For example, healthcare providers are significant users of CrowdStrike, and were heavily impacted by the outage event. However, when Parametrix has analyzed the impact of AWS, Azure, or GCP outages on the Fortune 500, these same healthcare


providers exhibit lower exposure. Therefore, the insurance industry should not rely solely on the CrowdStrike event as a primary data point for modeling future system failures involving cloud-based service providers.


While focusing on prevention is crucial, cyber (re)insurers have limited influence over the occurrence of disruptions and the deployment practices of service providers. The industry should concentrate on areas within its control, such as mapping, managing, and assessing service-providers aggregation risk. By obtaining a clear view of these aggregation points, we can leverage tools to evaluate the exposure of key aggregated services, thus mitigating exposure both to malicious and to non-malicious threats. This allows for a more proactive approach, allowing better underwriting decisions and paving the way for risk transfer solutions that provide effective management of exposure to systemic cyber risk.

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Parametrix, the leading provider of cloud monitoring, modeling, and insurance services, is a Managing General Agent and Lloyd's Coverholder based out of New York that underwrites parametric insurance against digital supply chain interruption. Parametrix uses proprietary technology to continuously monitor the performance of a variety of third-party IT services across the globe, and to collect granular data on service interruptions. It uses that data to assess risk, provide instant insurance quotations, and to streamline claims payments, which are delivered within days. Parametrix policies are backed by major A-rated global insurers.

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