<table>
<thead>
<tr>
<th>No.</th>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Overview</td>
<td>3</td>
</tr>
<tr>
<td>02</td>
<td>Top 10 Losses in Q3 2023</td>
<td>5</td>
</tr>
<tr>
<td>03</td>
<td>Major Exploits in Q3 Analysis</td>
<td>6</td>
</tr>
<tr>
<td>04</td>
<td>Hacks vs. Frauds Analysis</td>
<td>8</td>
</tr>
<tr>
<td>05</td>
<td>DeFi vs. CeFi Analysis</td>
<td>9</td>
</tr>
<tr>
<td>06</td>
<td>Losses by Chain</td>
<td>10</td>
</tr>
<tr>
<td>07</td>
<td>Funds Recovery</td>
<td>11</td>
</tr>
<tr>
<td>08</td>
<td>In Focus: Q3 2022 vs. Q3 2023</td>
<td>12</td>
</tr>
</tbody>
</table>
Crypto Losses in Q3 2023
PREPARED BY IMMUNEFI

The team at ImmuneFi, the leading bug bounty and security services platform for web3 which protects over $60 billion in user funds, has assessed the volume of crypto funds lost by the community due to hacks and scams in Q3 2023.

OVERVIEW

The global web3 space was valued at over $934 billion in 2022. That capital represents an unparalleled and attractive opportunity for blackhat hackers.

We have reviewed all instances where blackhat hackers have exploited various crypto protocols, as well as cases of protocols that have allegedly performed a rug pull in Q3 2023. We have located 76 such instances, including both successful and semi-successful hacking attempts, as well as alleged fraud.

In total, we have seen a loss of $685,510,444 across the web3 ecosystem in Q3 2023. $662,850,580 was lost to hacks in Q3 2023 across 49 specific incidents and $22,659,864 was lost to fraud in across 27 specific incidents. Most of that sum was lost by two specific projects: Mixin Network, a transactional network for digital assets, and Multichain, a cross-chain router protocol.

This number represents a 59.9% increase compared to Q3 2022, when hackers and fraudsters stole $428,718,083.
Crypto Losses in Q3 2023

**Key Takeaways in Q3 2023**

- The 2 major exploits of the quarter totaled $326,000,000 alone, accounting for 47.5% of all losses in Q3 2023.
- In Q3 2023, hacks continued to be the predominant cause of losses at 96.7% in comparison to frauds, scams, and rug pulls, which amounted to only 3.3% of the total losses.
- In Q3 2023, DeFi continued to be the main target of successful exploits at 72.9% as compared to CeFi at 27.1% of the total losses.
- The two most targeted chains in Q3 2023 were Ethereum and BNB Chain. Ethereum suffered the most individual attacks with 35 incidents, while BNB Chain witnessed 25 incidents. Base followed with 4 incidents and Optimism with 3 incidents. Polygon, Avalanche, Arbitrum, zkSync Era, and Fantom each had 2 incidents. Solana, and others, followed with 1 incident each.
- In total, $61,169,000 has been recovered from stolen funds in 6 specific situations. This number makes up 8.9% of the total losses in Q3 2023.

**Key Insights in Q3 2023**

- In Q3 2023, the number of attacks spiked: the number of single incidents increased 153% YoY from 30 to 76 in Q3 2023. The total number of losses increased by 59.9% when compared to Q3 2022, amounting to $685,510,444. Overall, Q3 has witnessed the highest loss in 2023.
- In Q3 2023, Ethereum surpassed BNB Chain once again and became the most targeted chain.
- Since its launch in early August, Coinbase-backed Base protocol has witnessed losses across 4 projects, sharing the top of targeted chains with Ethereum and BNB Chain.
- The Lazarus Group was responsible for $208,600,000 stolen, representing 30% of the total losses in Q3 2023. The group was allegedly behind the high-profile attacks on CoinEx, Alphapo, Stake, and CoinsPaid.
### Top 10 Losses in Q3 2023

<table>
<thead>
<tr>
<th>Company</th>
<th>Loss (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixin Network</td>
<td>$200,000,000</td>
</tr>
<tr>
<td>Multichain</td>
<td>$126,000,000</td>
</tr>
<tr>
<td>CoinEx</td>
<td>$70,000,000</td>
</tr>
<tr>
<td>Alphapio</td>
<td>$60,000,000</td>
</tr>
<tr>
<td>Stake</td>
<td>$41,300,000</td>
</tr>
<tr>
<td>CoinsPaid</td>
<td>$37,300,000</td>
</tr>
<tr>
<td>Curve Finance</td>
<td>$24,000,000</td>
</tr>
<tr>
<td>Achemist</td>
<td>$22,342,000</td>
</tr>
<tr>
<td>Fortress</td>
<td>$15,700,000</td>
</tr>
<tr>
<td>JPEG’d</td>
<td>$11,500,000</td>
</tr>
</tbody>
</table>
Major Exploits in Q3 Analysis

Most of the Q3 loss sum was lost by 2 specific projects, Mixin Network and Multichain, totaling $326,000,000. Together, these two projects represent 47.5% of Q3 losses alone.

**Mixin Network, $200 Million**
- On September 23rd, 2023, the decentralized Mixin network was breached, and cybercriminals took $200 million-worth of digital tokens at the time.

**Multichain, $126 Million**
- On July 7th, 2023, Multichain experienced a hack that involved the withdrawal of an estimated $126 million in assets. Affected tokens included DAI, Link, USDC, WBTC and wETH.
Major Exploits in Q3 Analysis

Lazarus Group in Focus

- The Lazarus Group was responsible for $208,600,000 stolen, representing 30% of the total losses in Q3 2023. The group was allegedly behind the high-profile attacks on CoinEx, Alphapo, Stake, and CoinsPaid.
Hacks vs. Fraud Analysis

In Q3 2023, hacks continue to be the predominant cause of losses as compared to frauds, scams, and rug pulls. An analysis of the losses shows that fraud accounts for 3.3% of the total losses in the Q3 2023, while hacks account for 96.7%.

OVERVIEW

- **Hacks**
  In total, we have seen a loss of $662,850,580 to hacks in Q3 2023 across 49 specific incidents. These numbers represent a 66% increase compared to Q3 2022, when losses caused by hacks totaled $398,912,483.

- **Fraud**
  In total, we have seen a loss of $22,659,864 to fraud in Q3 2023 across 27 specific incidents. These numbers represent a 23.9% decrease compared to Q3 2022, when losses caused by frauds, scams, and rug pulls totaled $29,805,600.
DeFi vs. CeFi Analysis

In Q3 2023, DeFi continues to be the main target for exploits, compared to CeFi. DeFi represents 72.9% of the total losses, while CeFi represents 27.1% of the total losses.

OVERVIEW

- **DeFi**
  DeFi has suffered **$499,810,444** in total losses in Q3 2023 across 71 incidents. These numbers represent a 18.5% increase compared to Q3 2022, when DeFi losses totaled $423,423,783.

- **CeFi**
  CeFi has suffered **$185,700,000** in total losses in Q3 2023 across 5 incidents. These numbers represent an 3,409.14% increase compared to Q3 2022, when DeFi losses totaled $5,294,300.
Losses by Chain

The two most targeted chains in Q3 2023 were Ethereum and BNB Chain. Ethereum suffered the most individual attacks with 35 incidents, representing 42.7% of the total losses across targeted chains. BNB Chain witnessed 25 incidents, representing 30.5% respectively.

**OVERVIEW**
- Ethereum and BNB Chain represent more than half of the chain losses in Q3 2023 at 73.2%. Base came in third with 4 incidents, representing 4.9% of total losses across chains.
- Optimism followed with 3 incidents, Polygon, Avalanche, Arbitrum, zkSync Era, and Fantom with 2 incidents each. Solana, and others with 1 incident each.

**INSIGHTS**
- In Q3 2023, Ethereum surpassed BNB Chain once again and became the most targeted chain.
- Since its launch in early August, Coinbase-backed Base protocol has witnessed losses across 4 projects, sharing the top of targeted chains with Ethereum and BNB Chain.
Funds Recovery

**OVERVIEW**

In total, $61,169,000 has been recovered from stolen funds in 6 specific situations. This number makes up 8.9% of the total losses in Q3 2023.

<table>
<thead>
<tr>
<th></th>
<th>Stolen</th>
<th>Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curve Finance</td>
<td>$24,000,000</td>
<td>$5,300,000</td>
</tr>
<tr>
<td>Achemist</td>
<td>$22,342,000</td>
<td>$22,342,000</td>
</tr>
<tr>
<td>JPEG'd</td>
<td>$11,500,000</td>
<td>$10,451,189</td>
</tr>
<tr>
<td>MetronomeDAO</td>
<td>$1,626,000</td>
<td>$1,463,400</td>
</tr>
<tr>
<td>Palmswap</td>
<td>$901,000</td>
<td>$720,800</td>
</tr>
<tr>
<td>GMBL.COMPUTER</td>
<td>$800,000</td>
<td>$382,000</td>
</tr>
</tbody>
</table>
In Focus: Q3 2022 vs. Q3 2023

**Hacks**

Losses are up 66.1% when compared to the previous period.

**Fraud**

Losses are down 23.9% when compared to the previous period.
In Focus: Q3 2022 vs. Q3 2023

**DeFi**
Losses are up 18.1% when compared to the previous period.

**CeFi**
Losses are up 3,409% when compared to the previous period.
Q3 witnessed the highest loss in this year, driven by large-scale attacks such as the one on Mixin Network and Multichain. State-backed actors played a crucial role as they were allegedly behind several cases this quarter. Their particular focus on CeFi led to a sharp surge in losses within this sector.

Mitchell Amador
Founder and CEO at ImmuneFi
Crypto Losses Q3 2023

TOTAL LOSSES YTD
$1,388,475,506
IN Q3
$685,510,444

MAJOR LOSSES

| Network       | Losses
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixin</td>
<td>$200</td>
</tr>
<tr>
<td>Multichain</td>
<td>$126</td>
</tr>
<tr>
<td>CoInEx</td>
<td>$70</td>
</tr>
<tr>
<td>Alphapo</td>
<td>$60</td>
</tr>
<tr>
<td>Stake</td>
<td>$41</td>
</tr>
<tr>
<td>CoinsPaid</td>
<td>$37</td>
</tr>
</tbody>
</table>

HACKS VS. FRAUD
- Hacks: $662,850,580
- Fraud: $22,659,864

DEFI VS. CEFI
- DeFi: $499,810,444
- CeFi: $185,700,000

TOP LOSSES BY CHAIN
- Ethereum: 35
- BNB Chain: 25
- Base: 4
- Optimism: 3

For more information about the Crypto Losses Report, please visit immunefi.com/research.
Immunefi

Immunefi is the leading bug bounty and security services platform for web3 protecting over $60 billion in user funds. Immunefi features a massive community of whitehat hackers who review projects’ blockchain and smart contract code, find and responsibly disclose vulnerabilities, and get paid for making crypto safer. With Immunefi, whitehat hackers are rewarded based on the severity of the vulnerability that they discover, creating incentives for as many experts as possible to examine project code for vulnerabilities.

Immunefi has pioneered the scaling web3 bug bounties standard, meaning that rewards should be priced accordingly with the severity of an exploit and the volume of funds at risk, which resulted in the company building the largest community of security talent in the web3 space.

**TOTAL BOUNTIES PAID**
Immunefi has paid out over $80 million in total bounties, while saving over $25 billion in user funds.

**TOTAL BOUNTIES AVAILABLE**
Immunefi offers over $155 million in available bounty rewards.

**SUPPORTED PROJECTS**
Trusted by established, multi-billion dollar projects like Chainlink, Wormhole, MakerDAO, TheGraph, Synthetix, and more, Immunefi now supports more than 300 projects across multiple crypto sectors.

**LARGEST BUG BOUNTY PAYMENTS IN THE HISTORY OF SOFTWARE**
Immunefi has facilitated the largest bug bounty payments in the history of software:
- **$10 million** for a vulnerability discovered in Wormhole, a generic cross-chain messaging protocol.
- **$6 million** for a vulnerability discovered in Aurora, a bridge, and a scaling solution for Ethereum.
- **$2.2 million** for a vulnerability discovered in Polygon, a decentralized Ethereum scaling platform that enables developers to build scalable, user-friendly dApps.
Disclaimer:
- Immunefi uses publicly available data and news reports in order to access and collect alleged frauds, scams, and rug pulls. Including such incidents in this report does not constitute a determination from Immunefi that a fraud, scam, or rug pull event did occur.
- The full dataset can be found here.

Notes:
- * Top 10 Losses in Q3 2023: **$5 million** in stolen funds were later recovered from the Curve Finance hack; Achemist later recoved **$22.3 million** from the stolen funds; **$10.4 million** in stolen funds were recovered from JPEG’d hack.
- The Total Value Locked (USD) data has been extracted from DeFiLlama.
- Immunefi assesses the volume of crypto funds lost by the community due to hacks and scams by reviewing, validating, and classifying publicly available data. In this report, Immunefi considered only rug pulls for its fraud category. A rug pull is a project that creates an image of credibility and attracts outside capital through token sales or other means with the sole purpose of stealing deposited user funds and disappearing.

More:
- If you’re a developer thinking about a bug-hunting career in web3, we got you. Check out our Web3 Security Library, and start taking home some of the over $155M in rewards available on Immunefi — the leading bug bounty platform for web3.

For more information, please visit https://immune.com/