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7 UNITED STATES DISTRICT COURT
8 NORTHERN DISTRICT OF CALIFORNIA
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10 BUNGIE, INC., UBISOFT
11 ENTERTAINMENT, and UBISOFT, INC.,

12 Plaintiff,

13 vs.

14 ANDREW THORPE a/k/a KRYPTO, an
individual; JONATHAN AGUEDA a/k/a
15 OVERPOWERED, an individual; WESAM
MOHAMMED a/k/a GRIZZY, an individual;
16 AHMAD MOHAMMED, an individual; and
Does 1 through 50, inclusive,

17 Defendants.
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CASE NO. 3:21-CV-05677-EMC

[ASSIGNED TO JUDGE EDWARD M. CHEN]

**DECLARATION OF ED KAISER, PH.D.
IN SUPPORT OF MOTION FOR ENTRY
OF DEFAULT JUDGMENT AGAINST
ANDREW THORPE**

Complaint Filed: July 23, 2021

DECLARATION OF DR. ED KAISER

I, ED KAISER, declare:

1. I am an Engineering Lead for Bungie, Inc. (“Bungie”), one of the plaintiffs in this action. I have been employed by Bungie since 2010 and hold a Ph.D. in Computer Science from Portland State University. As an Engineering Lead for Bungie, I lead the Product Security Team within the Central Technology group. I am responsible for the technical aspects of software security for all Bungie products. I manage a team of senior engineers and security analysts. I review technical plans, evaluate technical risks, and ensure that Bungie products are as secure as possible. In my role, I have become familiar with technical issues related to Destiny 2 cheats, hacks, and other malicious conduct impacting the operation of Destiny 2. I know all of the following of my own personal knowledge and, if called as a witness, could and would competently testify thereto.

2. Bungie is the developer, owner, and distributor of the video game Destiny 2. Destiny 2 is an online multiplayer “first-person shooter” game currently available on Windows-based personal computers, as well as home video game consoles and the Google Stadia cloud gaming service. Destiny 2 was originally released on September 6, 2017, for the Sony Playstation 4 and Microsoft Xbox One, and on October 24, 2017, for Windows computers. Since the game’s initial release, Bungie has released for sale multiple expansions or add-ons to the main game experience, which offer players new quests, weapons, game modes, and other additions or revisions to Destiny 2’s core gameplay.

3. Destiny 2 is an open, “shared-world” multiplayer, “first-person shooter” game in which players can see and interact with one another. The game offers two main types of activities: player-versus-environment (PvE), in which players cooperate to fight against computer-controlled opponents, and player-versus-player (PvP), in which players compete against one another. Matches played in Destiny 2’s PvP modes are intense and highly competitive affairs. In Destiny

1 2, competition can be particularly intense due to the presence of rare loot which can affect player
2 progression, in addition to the prestige of obtaining highly visible in-game “achievements”
3 through competitive success in the endgame PvP modes. The high skill ceiling of endgame
4 Destiny 2 PvP content is one of the selling points of Destiny 2, but also makes it much more
5 frustrating when a player’s experience is ruined by others using cheating software.

6 4. Destiny 2’s PvE modes can also become intense affairs because players can obtain
7 highly visible in-game achievements as well as special physical merchandise linked to certain
8 achievements by completing very challenging content within specific timeframes. As such, many
9 players take part in highly competitive “achievement hunting” in the hope of obtaining those
10 awards. If players can qualify for these difficult-to-obtain awards by using cheat software, that
11 can undermine the experience for legitimate players and frustrate those players.

12 5. In order to address the concerns about cheating activity in Destiny 2, Bungie
13 engineers are actively involved in addressing and attempting to reduce or eliminate cheating in the
14 game. For example, Bungie’s analysts actively work to identify software products used by players
15 to cheat in Destiny 2. Our engineering team also develops and improves anti-cheat technology to
16 detect and thwart such software products, polices the Destiny 2 servers for cheaters, reviews cheat
17 complaints and reports brought by other players, and takes steps to ban the accounts that use
18 cheating and hacking software in the game. Bungie employees spend hundreds of hours each year
19 engaged in these anti-cheat activities, but despite its best efforts, cheat developers continue to
20 develop and refine their software products to better circumvent detection.

21 6. One of the most popular software cheats for Destiny 2 are the Destiny 2 and
22 Destiny 2 Pro cheats developed and sold by the entity known as Ring-1 (the “Ring-1 Cheat”).
23 Bungie’s anti-cheat team has become familiar with the Ring-1 Cheat and, with the assistance of
24 our anti-cheat technology, we are able to detect with some degree of accuracy whether the players
25 caught cheating have been using the Ring-1 Cheat.

26 7. In connection with this lawsuit, my team has made an effort to estimate the number
27 of U.S. users who were banned for using the Ring-1 Cheat. Based on our investigation, we have

1 banned approximately 2,295 accounts for using the Ring-1 Cheating Software. This does not
2 account for the ever-increasing number of users who purchase Ring-1's cheats that are still
3 available on the market. We estimate that the actual number of Ring-1 users impacting Destiny 2
4 since the launch of the Cheating Software is closer to at least 4,000, at minimum.

5 8. To estimate the number of Destiny 2 players who used the Ring-1 Cheating
6 Software in the United States, we analyzed the IP addresses of the banned users. Based on that
7 analysis, we concluded that at least 1,099 of the accounts banned for using the Ring-1 Cheat were
8 from an IP address that originates the U.S. This represents a reasonable estimate of accounts that
9 were detected and banned for Ring-1 *and* had a presence in the U.S. There may be many more
10 U.S. users that access Destiny 2 through a VPN or spoofed IP address.

11 9. Additionally, as noted, the 1,099 U.S. users who were banned for using the Ring-1
12 Cheat does not account for all of the U.S. users who use the Ring-1 Cheat but have not (yet) been
13 caught. It is very likely that there are many more (perhaps as many as two or three times more)
14 users who regularly use the Ring-1 Cheat that have thus far escaped detection. Bungie
15 continuously works to improve its detection capabilities, and we expect that more users will be
16 banned for using the Ring-1 Cheat in the coming months.

17 10. In my capacity as Engineering Lead, I supervised an investigation into Ring-1's
18 method of embedding into a client computer and avoiding detection. Ring-1 is a hypervisor-based
19 cheat, meaning that it requires administrative rights to the computer even before the operating
20 system (OS) starts up. This type of software leverages the same vulnerabilities that malware and
21 rootkits use to take over internet-connected machines or to deploy ransomware. In the case of the
22 Ring-1 cheat, its distributors did not need to find a remote exploit to get the software onto the
23 system in the first place – the user willingly installs the software. However, I doubt that any Ring-
24 1 user fully understands the impact of installing that software or the malicious acts that Ring-1's
25 controllers could perform with that access. It would not be difficult for a Ring-1 controller to
26 abuse their access to obtain personal data or financial information from a user, or to upload
27 ransomware, or to hijack a user's system to distribute CSAM, as just a few examples.

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I declare under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

Executed December 12, 2022, at Bellevue, Washington.



Ed Kaiser
BUNGIE, INC.

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CERTIFICATE OF SERVICE CM/ECF

I hereby certify under penalty of perjury that on December 13, 2022, I electronically filed the foregoing document entitled **DECLARATION OF ED KAISER, PH.D. IN SUPPORT OF MOTION FOR ENTRY OF DEFAULT JUDGMENT AGAINST ANDREW THORPE**, with the Clerk of Central District of California by using the Court’s CM/ECF system.

Participants in the case who are registered CM/ECF users will be served by the Central District of California’s CM/ECF system.

I further certify that some of the participants in the case are not registered CM/ECF users and I have mailed the foregoing document by First Class Mail, postage prepaid, or have dispatched it to a third-party commercial carrier for delivery within 3 calendar days to the following non-CM/ECF participants:

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