

BIOS Update Procedure for ASUS Z690-A with Intel Core i9-12900K

The BIOS plays a vital role in how a computer starts up. It's the bridge between the hardware and software right when the machine powers on. For anyone working in IT, especially in performance-heavy settings, keeping it updated is not just a good idea—it's often necessary. Updates can fix bugs, tighten security, and ensure your hardware stays compatible with new tech.

In this walkthrough, the BIOS update is done on a high-end PC that uses the ASUS ROG STRIX Z690-A GAMING WIFI D4 motherboard paired with an Intel Core i9-12900K processor. It's part of a hands-on IT training project. The update jumps from version 2103 (2022) to version 4301 (2025), which brings significant changes, including better support for newer processors and microcode-level improvements.

➤ Why We Updated

Before making any changes, there was a quick review of what's included in the newer BIOS version:

- Better support for newer Intel CPUs (12th through 14th Gen)
- Patches for known stability issues
- Key security updates, especially those tied to Intel's Management Engine

The document outlines how to determine whether a BIOS update is needed, the steps for getting everything ready, how to carry out the update safely, and how to check that it worked.

A Word of Caution

BIOS updates are delicate. Done wrong, they can leave your motherboard useless. So each step was followed carefully. The version was double-checked. The process was kept stable—no power losses or system interruptions.

➤ **Quick Hardware Overview**

Component	Detail
Motherboard	ASUS ROG STRIX Z690-A GAMING WIFI D4
BIOS	Version 2103 (as of 09/30/2022)
Target BIOS	Version 4301 (released 05/26/2025)
CPU	Intel Core i9-12900K
Operating System	Windows 11 Pro (Build 22600)
Memory	64 GB DDR4
BIOS Mode	UEFI

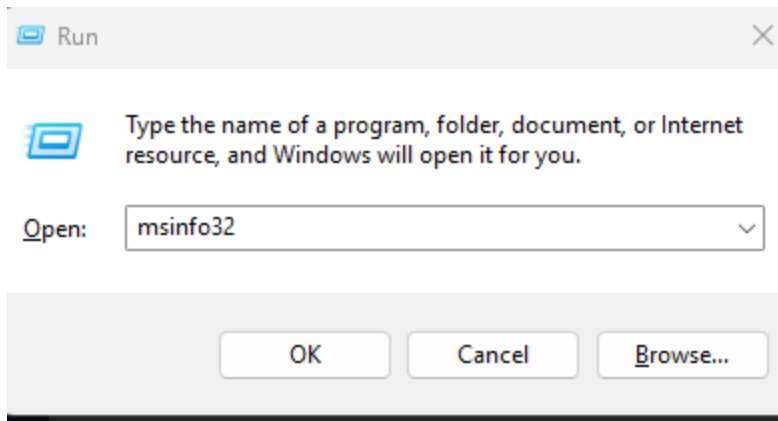
➤ **Before the Update: Setup Steps**

1. Check Your System Info

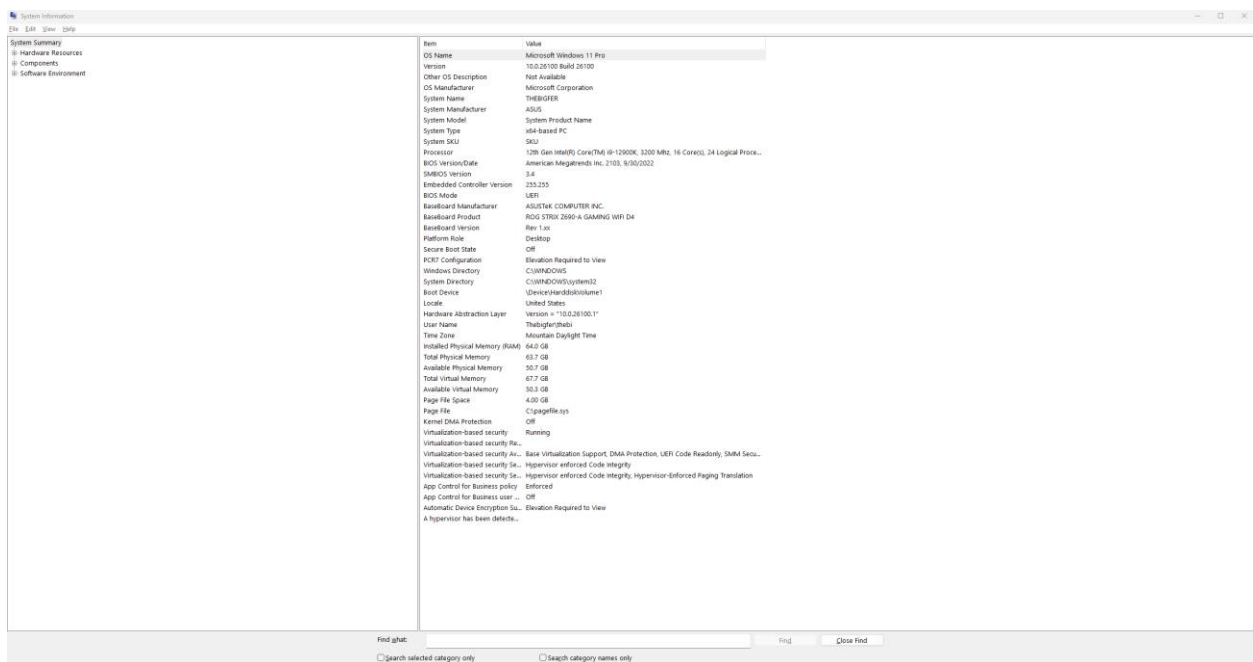
Start with identifying your current BIOS version:

- Open System Info with Windows + R, then type msinfo32
- Look for the BIOS Version/Date field
- Alternatively, in Command Prompt, run:

```
wmic bios get smbiosbiosversion
```



This confirmed version 2103 was installed.



2. Download the Right BIOS File

- Go to the [ASUS support site](#)
- Search for the exact model: Z690-A GAMING WIFI D4
- Head to the BIOS & Firmware section and choose Windows 11
- Download version 4301 (from May 2025)
- Confirm the file ends with .CAP

➤ What's ASUS EZ Flash?

This is ASUS' tool built into the BIOS itself. It lets you update using just a USB drive. No need for extra software or booting into Windows. That makes it more reliable.

➤ BIOS Update: Step-by-Step

Step 1: Get Your USB Drive Ready

- Plug in a USB stick (at least 1 GB)
- Format it as FAT32
- Copy the .CAP BIOS file to the root directory (not in a folder)

Step 2: Plug It Into the Right Port

Use one of the black USB ports on the motherboard's I/O panel, below the "BIOS" label.



Step 3: Boot Into BIOS

- Restart your PC and hit DEL or F12 repeatedly
- Hit F7 to switch to Advanced Mode
- Navigate to Tool and open ASUS EZ Flash 3 Utility
- Select the USB drive, choose the .CAP file, and approve the update

Step 4: Let It Finish

- The system reboots and starts updating on its own
- Do not shut it off or unplug anything
- This takes about 2–5 minutes

Step 5: Final Confirmation

- You'll see a success message—press F1
- Hit F5 to load optimized defaults
- Make any needed changes if you had a custom BIOS setup before
- Save and exit with F10

Step 6: Double Check in Windows

- Once back in Windows, run msinfo32 again
- BIOS Version should now say 4301

➤ What This Proves

This wasn't just about running a BIOS update—it was a practice in careful, technical work:

- Checking the hardware, software, and compatibility ahead of time
- Using vendor-specific tools the right way
- Following through with risk management steps
- Verifying success after the fact

The result is a system that's more secure, more stable, and ready for future processor support. These kinds of tasks might not happen every day, but they're part of what makes someone stand out in IT support or systems administration.