



# CVE-2022-48189

[MITRE](#)[NVD](#)[CVE.ORG](#)[Print: PDF](#)

## Summary

|                        |  |
|------------------------|--|
| <b>CVE</b>             | CVE-2022-48189   |
| <b>State</b>           | PUBLIC   |
| <b>Assigner</b>        | psirt@lenovo.com   |
| <b>Source Priority</b> | CVE Program / NVD first with legacy fallback   |
| <b>Published</b>       | 2023-10-30 15:15:00 UTC  |
| <b>Updated</b>         | 2023-11-03 17:16:00 UTC  |
| <b>Description</b>     | An SMM driver input validation vulnerability in the BIOS of some ThinkPad models could allow an attacker with local access |

## Risk And Classification

**Problem Types:** NVD-CWE-noinfo

## NVD Known Affected Configurations (CPE 2.3)

| Type             | Vendor                 | Product                                     | Version | Update | Edition | Language |
|------------------|------------------------|---|---------|--------|---------|----------|
| Hardware         | <a href="#">Lenovo</a> | <a href="#">Thinkpad E14</a>                | -       | All    | All     | All      |
| Operating System | <a href="#">Lenovo</a> | <a href="#">Thinkpad E14 Firmware</a>       | All     | All    | All     | All      |
| Hardware         | <a href="#">Lenovo</a> | <a href="#">Thinkpad E14 Gen 2</a>          | -       | All    | All     | All      |
| Operating System | <a href="#">Lenovo</a> | <a href="#">Thinkpad E14 Gen 2 Firmware</a> | All     | All    | All     | All      |
| Hardware         | <a href="#">Lenovo</a> | <a href="#">Thinkpad E14 Gen 4</a>          | -       | All    | All     | All      |
| Operating System | <a href="#">Lenovo</a> | <a href="#">Thinkpad E14 Gen 4 Firmware</a> | All     | All    | All     | All      |
| Hardware         | <a href="#">Lenovo</a> | <a href="#">Thinkpad E15</a>                | -       | All    | All     | All      |
| Operating System | <a href="#">Lenovo</a> | <a href="#">Thinkpad E15 Firmware</a>       | All     | All    | All     | All      |
| Hardware         | <a href="#">Lenovo</a> | <a href="#">Thinkpad E15 Gen 2</a>          | -       | All    | All     | All      |
| Operating System | <a href="#">Lenovo</a> | <a href="#">Thinkpad E15 Gen 2 Firmware</a> | All     | All    | All     | All      |
| Hardware         | <a href="#">Lenovo</a> | <a href="#">Thinkpad E15 Gen 4</a>          | -       | All    | All     | All      |
| Operating System | <a href="#">Lenovo</a> | <a href="#">Thinkpad E15 Gen 4 Firmware</a> | All     | All    | All     | All      |
| Hardware         | <a href="#">Lenovo</a> | <a href="#">Thinkpad E490</a>               | -       | All    | All     | All      |
| Hardware         | <a href="#">Lenovo</a> | <a href="#">Thinkpad E490s</a>              | -       | All    | All     | All      |
| Operating System | <a href="#">Lenovo</a> | <a href="#">Thinkpad E490s Firmware</a>     | All     | All    | All     | All      |
| Operating System | <a href="#">Lenovo</a> | <a href="#">Thinkpad E490 Firmware</a>      | All     | All    | All     | All      |
| Hardware         | <a href="#">Lenovo</a> | <a href="#">Thinkpad E590</a>               | -       | All    | All     | All      |

|                  |        |                                  |     |     |     |     |
|------------------|--------|----------------------------------|-----|-----|-----|-----|
| Operating System | Lenovo | Thinkpad E590 Firmware           | All | All | All | All |
| Hardware         | Lenovo | Thinkpad L13 Gen 3               | -   | All | All | All |
| Operating System | Lenovo | Thinkpad L13 Gen 3 Firmware      | All | All | All | All |
| Hardware         | Lenovo | Thinkpad L13 Yoga Gen 3          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad L13 Yoga Gen 3 Firmware | All | All | All | All |
| Hardware         | Lenovo | Thinkpad L14                     | -   | All | All | All |
| Operating System | Lenovo | Thinkpad L14 Firmware            | All | All | All | All |
| Operating System | Lenovo | Thinkpad L14 Firmware            | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad L15                     | -   | All | All | All |
| Operating System | Lenovo | Thinkpad L15 Firmware            | All | All | All | All |
| Hardware         | Lenovo | Thinkpad L15 Gen 2               | -   | All | All | All |
| Operating System | Lenovo | Thinkpad L15 Gen 2 Firmware      | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad L15 Gen 3               | -   | All | All | All |
| Operating System | Lenovo | Thinkpad L15 Gen 3 Firmware      | All | All | All | All |
| Hardware         | Lenovo | Thinkpad L490                    | -   | All | All | All |
| Operating System | Lenovo | Thinkpad L490 Firmware           | All | All | All | All |
| Hardware         | Lenovo | Thinkpad L590                    | -   | All | All | All |
| Operating System | Lenovo | Thinkpad L590 Firmware           | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P14s Gen 1              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P14s Gen 1 Firmware     | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P14s Gen 2              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P14s Gen 2 Firmware     | All | All | All | All |
| Operating System | Lenovo | Thinkpad P14s Gen 2 Firmware     | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad P14s Gen 3              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P14s Gen 3 Firmware     | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad P15s Gen 1              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P15s Gen 1 Firmware     | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P15s Gen 2              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P15s Gen 2 Firmware     | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad P15v Gen 1              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P15v Gen 1 Firmware     | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P15v Gen 2              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P15v Gen 2 Firmware     | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P15v Gen 3              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P15v Gen 3 Firmware     | All | All | All | All |

|                  |        |                              |     |     |     |     |
|------------------|--------|------------------------------|-----|-----|-----|-----|
| Hardware         | Lenovo | Thinkpad P15 Gen 1           | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P15 Gen 1 Firmware  | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P15 Gen 2           | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P15 Gen 2 Firmware  | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P16s Gen 1          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P16s Gen 1 Firmware | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad P16 Gen 1           | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P16 Gen 1 Firmware  | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P17 Gen 1           | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P17 Gen 1 Firmware  | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P17 Gen 2           | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P17 Gen 2 Firmware  | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P1 Gen 2            | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P1 Gen 2 Firmware   | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P1 Gen 3            | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P1 Gen 3 Firmware   | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P1 Gen 4            | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P1 Gen 4 Firmware   | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P1 Gen 5            | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P1 Gen 5 Firmware   | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P43s                | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P43s Firmware       | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad P53                 | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad P53s                | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P53s Firmware       | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P53 Firmware        | All | All | All | All |
| Hardware         | Lenovo | Thinkpad P73                 | -   | All | All | All |
| Operating System | Lenovo | Thinkpad P73 Firmware        | All | All | All | All |
| Hardware         | Lenovo | Thinkpad T14s                | -   | All | All | All |
| Operating System | Lenovo | Thinkpad T14s Firmware       | All | All | All | All |
| Hardware         | Lenovo | Thinkpad T14s Gen 2          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad T14s Gen 2 Firmware | All | All | All | All |
| Hardware         | Lenovo | Thinkpad T14s Gen 3          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad T14s Gen 3 Firmware | All | All | All | All |
| Hardware         | Lenovo | Thinkpad T14 Gen 1           | -   | All | All | All |

|                  |        |  |     |     |     |     |
|------------------|--------|--|-----|-----|-----|-----|
| Operating System | Lenovo | <a href="#">Thinkpad T14 Gen 1 Firmware</a>            | All | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T14 Gen 2</a>                     | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T14 Gen 2 Firmware</a>            | All | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T14 Gen 2 Firmware</a>            | -   | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T14 Gen 3</a>                     | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T14 Gen 3 Firmware</a>            | -   | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T15</a>                           | -   | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T15g Gen 1</a>                    | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T15g Gen 1 Firmware</a>           | All | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T15g Gen 2</a>                    | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T15g Gen 2 Firmware</a>           | All | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T15p Gen 1</a>                    | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T15p Gen 1 Firmware</a>           | All | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T15p Gen 2</a>                    | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T15p Gen 2 Firmware</a>           | All | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T15p Gen 3</a>                    | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T15p Gen 3 Firmware</a>           | All | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T15 Firmware</a>                  | All | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T15 Gen 2</a>                     | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T15 Gen 2 Firmware</a>            | -   | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T16 Gen 1</a>                     | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T16 Gen 1 Firmware</a>            | -   | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T490</a>                          | -   | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T490s</a>                         | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T490s Firmware</a>                | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T490 Firmware</a>                 | -   | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad T590</a>                          | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad T590 Firmware</a>                 | -   | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad Thinkpad R14 Gen 2</a>            | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad Thinkpad R14 Gen 2 Firmware</a>   | All | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad Thinkpad R14 Gen 4</a>            | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad Thinkpad R14 Gen 4 Firmware</a>   | All | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad Thinkpad S3 2nd Gen</a>           | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad Thinkpad S3 2nd Gen Firmware</a>  | All | All | All | All |
| Hardware         | Lenovo | <a href="#">Thinkpad X12 Detachable Gen 1</a>          | -   | All | All | All |
| Operating System | Lenovo | <a href="#">Thinkpad X12 Detachable Gen 1 Firmware</a> | All | All | All | All |

|                  |        |                                      |     |     |     |     |
|------------------|--------|--------------------------------------|-----|-----|-----|-----|
| Hardware         | Lenovo | Thinkpad X13                         | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X13 Firmware                | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X13 Gen 2                   | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X13 Gen 2 Firmware          | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X13 Gen 3                   | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X13 Gen 3 Firmware          | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X13 Yoga Gen 1              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X13 Yoga Gen 1 Firmware     | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X13 Yoga Gen 2              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X13 Yoga Gen 2 Firmware     | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X13 Yoga Gen 3              | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X13 Yoga Gen 3 Firmware     | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Carbon 10th Gen          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Carbon 10th Gen Firmware | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Carbon 7th Gen           | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Carbon 7th Gen Firmware  | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Carbon 8th Gen           | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Carbon 8th Gen Firmware  | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Carbon 9th Gen           | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Carbon 9th Gen Firmware  | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Extreme 2nd Gen          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Extreme 2nd Gen Firmware | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Extreme 3rd Gen          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Extreme 3rd Gen Firmware | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Extreme 4th Gen          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Extreme 4th Gen Firmware | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Extreme Gen 5            | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Extreme Gen 5 Firmware   | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Nano Gen 1               | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Nano Gen 1 Firmware      | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Nano Gen 2               | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Nano Gen 2 Firmware      | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Titanium                 | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Titanium Firmware        | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Yoga 4th Gen             | -   | All | All | All |

|                  |        |                                   |     |     |     |     |
|------------------|--------|-----------------------------------|-----|-----|-----|-----|
| Operating System | Lenovo | Thinkpad X1 Yoga 4th Gen Firmware | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Yoga 5th Gen          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Yoga 5th Gen Firmware | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Yoga 6th Gen          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Yoga 6th Gen Firmware | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X1 Yoga 7th Gen          | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X1 Yoga 7th Gen Firmware | All | All | All | All |
| Hardware         | Lenovo | Thinkpad X390                     | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X390 Firmware            | -   | All | All | All |
| Hardware         | Lenovo | Thinkpad X390 Yoga                | -   | All | All | All |
| Operating System | Lenovo | Thinkpad X390 Yoga Firmware       | All | All | All | All |
| Hardware         | Lenovo | Thinkpad Z13 Gen 1                | -   | All | All | All |
| Operating System | Lenovo | Thinkpad Z13 Gen 1 Firmware       | All | All | All | All |
| Hardware         | Lenovo | Thinkpad Z16 Gen 1                | -   | All | All | All |
| Operating System | Lenovo | Thinkpad Z16 Gen 1 Firmware       | All | All | All | All |

## References

| Reference   | Source  | Link  | Tags                |
|---|---------|---|---------------------|
| ThinkPad BIOS Vulnerabilities - Lenovo Support US | MISC    | <a href="https://support.lenovo.com">support.lenovo.com</a> |                     |
| CVE Program record                                | CVE.ORG | <a href="https://www.cve.org">www.cve.org</a>               | canonical           |
| NVD vulnerability detail                          | NVD     | <a href="https://nvd.nist.gov">nvd.nist.gov</a>             | canonical, analysis |

No vendor comments have been submitted for this CVE.

There are currently no legacy QID mappings associated with this CVE.

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