Computer Hardware Recommendations

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POWER LINE® SYSTEMS
Part of Bentley Systems

Desktop Operating Systems

Microsoft Windows 11 Supported

- All development
- All testing and support

Microsoft Windows 10 Not Supported

- Microsoft ended support on October 14, 2025
- No more testing
- Currently no known issues

Current OS Distribution of PLS Users

- 90% on Windows 11
- 10% on Windows 10

New Desktop Hardware Requirement

v21.13+ Requires Processors With AVX2

What is AVX2?

- Advanced Vector Extensions (256-bit Single Instruction Multiple Data Instructions)
- Improves the processor's ability to process multiple data simultaneously
- Several types of calculations (Finite Element) in PLS software sped up by ~10%

What Processors Support It?

- Mainstream Intel chips designed in 2013 and later
- AMD chips designed in 2015 and later
- Intel Celeron and Pentium chips, designed in 2020 and later

How Do I Know If My Computer Supports It?

- Any computer less than 5 years old, and most computers less than 10 years old, should be fine
- PLS Setup.exe now checks for this capability and will warn you if it is not there

Desktop Hardware Recommendations

PLS-CADD

- Single core performance and RAM are most important
- Some functions are multithreaded, but most are still single threaded
- Survey data and imagery can consume lots of memory

PLS-POLE & TOWER

- Number of cores most important
- Analysis time proportional to (# load cases) / (# cores)

All Applications

- PCIe NVMe SSD for locally stored files
- Gigabit or 10 Gigabit network connection for remotely stored files
  - “Compress XYZ and TIN files when saving to a network share” setting in File/Preferences
- Large 4K monitor or multiple monitors
- High end graphics card is still not needed

PLS-GRID Server Recommendations

Operating System

- Windows Server 2016 or later
- Most PLS testing is still done on Windows Server 2016

Processor and Memory

- AMD Epyc or Intel Xeon processors
- At least 2 cores dedicated to PLS-GRID
- Additional cores recommended if using encryption at rest
- Add one additional core for each additional 100 PLS-GRID users
- 16 GB of ECC RAM dedicated to PLS-GRID
- Add one GB of RAM for every TB of project data

Storage and Network

- 1+ TB for project data
- 10 GB for PLS-GRID databases plus 10-100 GB for caching map imagery
- 10 Gbps network interface (1 Gbps tolerable for small installations)

Average PLS Client Computer

From PLS License Server Telemetry

CPU Cores (Physical/Logical)

- Average: 13 / 19
- Min: 1 / 2
- Max: 96 / 128

RAM (GB)

- Average: 48
- Min: 4
- Max: 2036

Operating System

- Microsoft Windows 11 (90%, remainder on Windows 10)

What Pushes the Limits?

PLS-CADD

- Survey data and TINs - billions of points and multi-GB TIN files
  - *Feature Code Symbols* - *points draw much faster than detailed symbols*
- Imagery - hundreds of high-resolution satellite images

TOWER

- Family manager permutations - hundreds of permutations

PLS-POLE & TOWER

- Load cases - hundreds

PLS-GRID

- Encryption at rest - computation load for PLS-GRID
- Dataset size - thousands of projects with millions of files
- Lots of simultaneous users - hundreds

Sample Laptop - 16”Screen

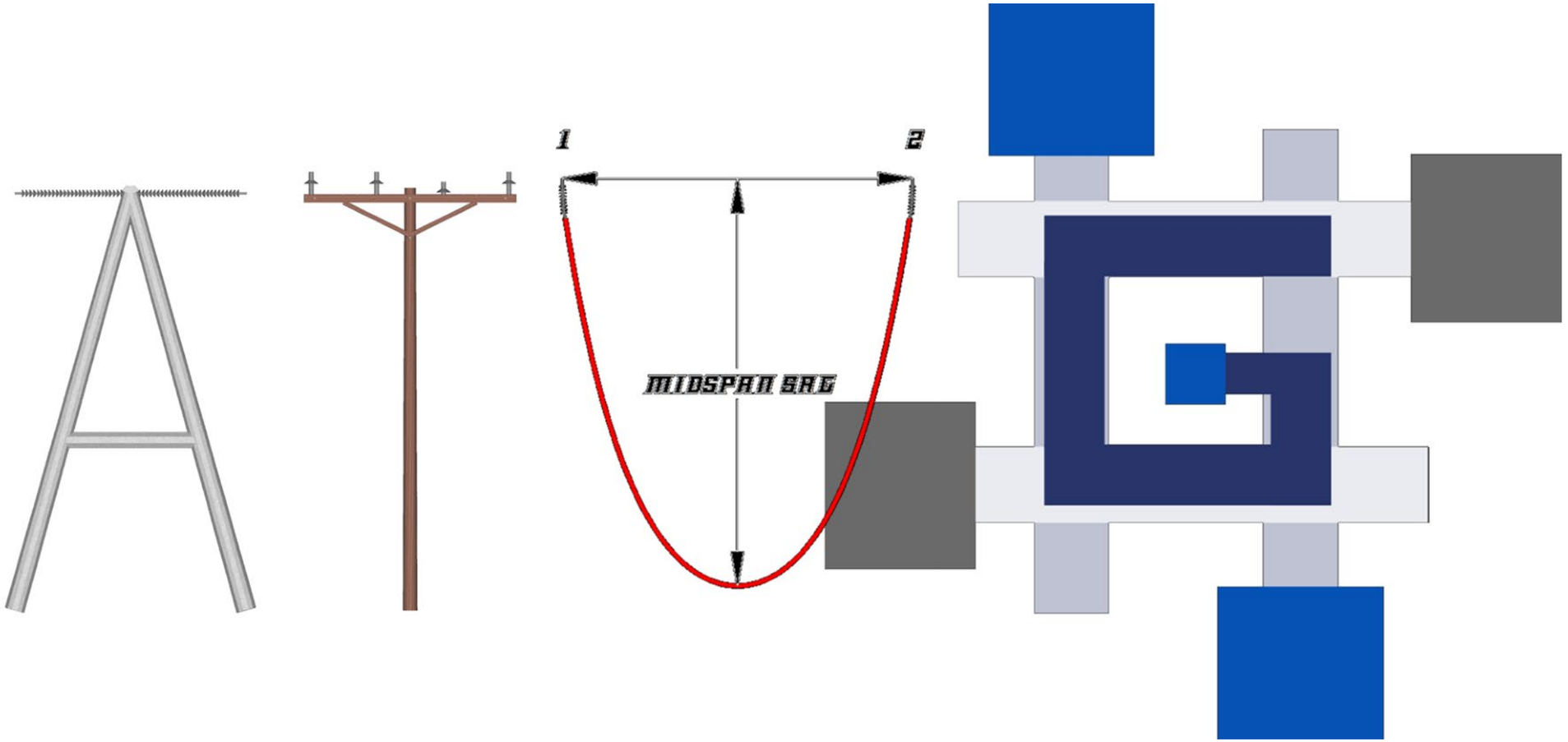
- Intel Core Ultra 9 Processor 285H
  - Up to 5.4 GHz
  - 16 cores (6 performance, 8 efficiency, 2 low power)
  - 24 MB cache
- 32 GB RAM
- 1 TB M.2 PCIe NVMe SSD
- NVIDIA GeForce RTX 5060 (8GB)
- Windows 11
- US $2,550 (June 5, 2026)

Sample Workstation

- AMD Ryzen 9 9950X3D2
  - Up to 5.6 GHz
  - 16 cores (32 threads)
  - 192 MB cache
- 64 GB RAM
- 2 TB M.2 PCIe NVMe SSD
- On-Board AMD Radeon Graphics
- Windows 11
- US $4,700 (June 5, 2026)

New (AI) World

- Many computers are no longer cheaper than they were
- High-end multi-core processors (e.g. AMD Threadrippers) are very expensive
- RAM is now very expensive
- High-end GPUs are very expensive
  - Good news is that our software doesn’t need a high-end GPU



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