

HP 331011867-01

HP NVIDIA Tesla P100 GPU Computing Processor User Manual

Model: 331011867-01

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1. INTRODUCTION

This manual provides essential information for the installation, operation, maintenance, and troubleshooting of your HP NVIDIA Tesla P100 GPU Computing Processor. Designed for high-performance computing environments, this enterprise-grade GPU delivers exceptional processing power for demanding applications. Please read this manual thoroughly before installation and operation to ensure proper usage and to maximize the lifespan of your product.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury and damage to the product or other components:

- **Static Electricity:** Electronic components are sensitive to electrostatic discharge (ESD). Always wear an anti-static wrist strap or frequently touch a grounded metal object before handling the GPU.
- **Power Disconnection:** Ensure the computer system is completely powered off and unplugged from the wall outlet before installing or removing the GPU.
- **Ventilation:** Ensure adequate airflow within the computer chassis to prevent overheating.
- **Professional Installation:** If you are unfamiliar with computer hardware installation, seek assistance from a qualified technician.
- **Physical Handling:** Handle the GPU by its edges. Avoid touching the gold connector pins or other sensitive components.

3. PACKAGE CONTENTS

Verify that all items are present in your package. If any items are missing or damaged, contact your retailer.

- HP NVIDIA Tesla P100 GPU Computing Processor
- Documentation (Quick Start Guide, Warranty Information)
- *(Note: Drivers are typically downloaded from the manufacturer's website.)*

4. PRODUCT OVERVIEW

The HP NVIDIA Tesla P100 is a high-performance GPU accelerator designed for data centers and high-performance computing (HPC) applications. It features the NVIDIA Pascal architecture and 16 GB of HBM2 memory, providing significant acceleration for deep learning, scientific simulations, and data analytics workloads.



Image: Front view of the HP NVIDIA Tesla P100 GPU Computing Processor. This image displays the cooling shroud and the general form factor of the card.

Key Features:

- NVIDIA Pascal Architecture
- 16 GB HBM2 Memory
- Designed for HPC and AI workloads
- Passive cooling design (requires system airflow)

5. SETUP AND INSTALLATION

5.1 Pre-installation Checklist

- **System Compatibility:** Ensure your server or workstation motherboard has an available PCI Express x16 slot.
- **Power Supply:** Verify your system's power supply unit (PSU) meets the minimum wattage requirements for the Tesla P100 and has the necessary PCIe power connectors (typically 6-pin or 8-pin, consult your system's documentation).
- **Cooling:** Ensure your system chassis has adequate cooling and airflow, as the Tesla P100 is a passively cooled card.
- **Tools:** You may need a Phillips head screwdriver.

5.2 Hardware Installation

1. **Power Down:** Turn off your computer and unplug the power cord from the wall outlet.
2. **Open Chassis:** Remove the side panel of your computer case to access the motherboard.
3. **Locate PCIe Slot:** Identify an available PCI Express x16 slot on your motherboard. Remove any expansion slot covers corresponding to the chosen slot.
4. **Insert GPU:** Carefully align the Tesla P100 with the PCIe slot and press down firmly until it is fully seated. A click may indicate it is locked into place.
5. **Secure GPU:** Secure the GPU to the chassis using the screw or latch mechanism provided by your computer case.
6. **Connect Power:** Connect the appropriate PCIe power cables from your power supply to the power connectors on the Tesla P100. Ensure all connections are secure.
7. **Close Chassis:** Replace the side panel of your computer case.
8. **Reconnect Power:** Plug the power cord back into the wall outlet and power on your computer.

5.3 Driver Installation

1. **Boot System:** Allow your operating system to boot normally.
2. **Download Drivers:** Visit the official NVIDIA website (or HP support website for specific OEM drivers) and download the latest drivers compatible with the Tesla P100 and your operating system.
3. **Install Drivers:** Follow the on-screen instructions to install the drivers. A system restart may be required after installation.
4. **Verification:** After restarting, verify the GPU is recognized and functioning correctly through your operating system's device manager or NVIDIA control panel.

6. OPERATING THE TESLA P100

The HP NVIDIA Tesla P100 is designed to accelerate specific computational tasks. It does not typically function as a primary display output card for general desktop use (though it has DisplayPort, its primary function is compute). Its operation is managed by specialized software and drivers, such as NVIDIA CUDA Toolkit and relevant libraries.

- **Software Requirements:** Ensure your applications are configured to utilize the NVIDIA GPU for acceleration. Refer to your application's documentation for GPU acceleration settings.
- **Monitoring:** Use NVIDIA's system management interface (e.g., `nvidia-smi` on Linux) or third-party tools to monitor GPU utilization, temperature, and power consumption.
- **Optimal Performance:** For optimal performance, ensure your system's operating system and GPU drivers are kept up to date.

7. MAINTENANCE

Proper maintenance helps ensure the longevity and stable operation of your Tesla P100 GPU.

- **Dust Removal:** Periodically open your computer case and use compressed air to gently remove dust buildup from the GPU's heatsink and surrounding components. Ensure the system is powered off and unplugged before performing this.

- **Airflow:** Ensure that internal cables do not obstruct airflow within the chassis. Maintain a clean environment to minimize dust accumulation.
- **Temperature Monitoring:** Regularly monitor GPU temperatures during heavy workloads to ensure they remain within safe operating limits. Excessive temperatures can indicate insufficient cooling or dust buildup.

8. TROUBLESHOOTING

This section addresses common issues you might encounter with your Tesla P100 GPU.

8.1 No Display Output (if used as primary display) or System Fails to Boot

- **Check Power Connections:** Ensure all PCIe power cables are securely connected to the GPU and the power supply.
- **Reseat GPU:** Power off the system, unplug it, and reseat the GPU firmly in its PCIe slot.
- **Check BIOS/UEFI Settings:** Ensure your motherboard's BIOS/UEFI settings are configured to detect and use the correct graphics adapter.
- **Minimum Power:** Verify your power supply meets the minimum wattage requirements.

8.2 Driver Installation Issues

- **Correct Drivers:** Ensure you have downloaded the correct drivers for your specific GPU model and operating system from the official NVIDIA or HP website.
- **Clean Installation:** Use the driver installer's "clean installation" option to remove previous driver versions before installing new ones.
- **Operating System Updates:** Ensure your operating system is fully updated.

8.3 Performance Issues or Instability

- **Temperature:** Monitor GPU temperatures. Overheating can lead to throttling and instability. Improve system airflow if temperatures are consistently high.
- **Power Delivery:** Ensure your power supply is stable and provides sufficient power to the GPU.
- **Software Conflicts:** Check for conflicts with other installed software or drivers.
- **Application Compatibility:** Verify that the applications you are running are optimized for GPU acceleration and are compatible with the Tesla P100.

9. SPECIFICATIONS

Feature	Detail
Brand	HP
Model Number	331011867-01
Graphics Coprocessor	NVIDIA Tesla P100
Graphics RAM Size	16 GB
Graphics Processor Manufacturer	NVIDIA
Video Output Interface	DisplayPort <i>(Note: Primarily for compute, not general display)</i>
Product Dimensions	1 x 1 x 1 inches
Item Weight	1 pounds

Feature	Detail
ASIN	B06WV7HFWV
Date First Available	July 6, 2017

10. WARRANTY AND SUPPORT

This HP NVIDIA Tesla P100 GPU Computing Processor is covered by a limited manufacturer's warranty. The specific terms and duration of the warranty may vary based on your region and point of purchase. Please refer to the warranty documentation included with your product or visit the official HP support website for detailed information.

For technical support, driver downloads, and additional resources, please visit the official HP support website or NVIDIA's support portal. When contacting support, please have your product model number (331011867-01) and serial number ready.

- **HP Support:** www.hp.com/support
- **NVIDIA Support:** www.nvidia.com/support

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