

## HP 761879-001

# HP 761879-001 12Gb/s SAS Expander Instruction Manual

For ProLiant DL380 Gen9, DL180 Gen9, and ML350 Gen9 Servers

---

## 1. INTRODUCTION

This instruction manual provides essential information for the proper installation, operation, and maintenance of the HP 761879-001 12Gb/s SAS Expander. This component is designed to enhance storage connectivity within compatible HP ProLiant Gen9 servers by allowing a single Host Bus Adapter (HBA) to connect to a larger number of SAS and SATA drives.

Please read this manual thoroughly before attempting installation or operation to ensure optimal performance and system stability.

## 2. PRODUCT OVERVIEW

The HP 761879-001 is a 12Gb/s SAS Expander card that facilitates the connection of multiple SAS and SATA hard drives to a single SAS HBA. It is a critical component for server configurations requiring high-density storage solutions.

### Key Features:

- **12Gb/s SAS Technology:** Delivers high performance and data bandwidth up to 1200MB/s per physical link.
- **Drive Compatibility:** Supports both SAS and SATA hard drives, allowing for flexible storage deployment.
- **High Capacity Support:** Capable of supporting up to 26 internal drive bays, depending on the specific server configuration.
- **Backward Compatibility:** Fully compatible with 6Gb/s SATA technology.
- **Server Support:** Designed for use with HP ProLiant DL380 Gen9, DL180 Gen9, and ML350 Gen9 servers.



**Image 1:** HP 761879-001 12Gb/s SAS Expander Card. This image displays the physical appearance of the SAS expander card, showing its various connectors and components.

### 3. SETUP AND INSTALLATION

Installation of the SAS expander card should be performed by qualified personnel. Always ensure the server is powered off and disconnected from the power source before opening the chassis.

#### Installation Steps:

1. **Prepare the Server:** Power down the server and disconnect all power cables. Open the server chassis according to the server's service manual.
2. **Locate PCIe Slot:** Identify an available PCIe slot on the server's motherboard. The SAS expander card uses a PCIe slot primarily for power delivery, not for data transfer.
3. **Install the Expander Card:** Carefully insert the HP 761879-001 SAS Expander card into the chosen PCIe slot, ensuring it is fully seated. Secure the card with any retaining clips or screws provided by the server chassis.
4. **Connect to Host Bus Adapter (HBA):**
  - The expander card utilizes Mini-SAS SFF-8087 connectors for internal connections. Ensure you have the correct cables.
  - Connect the Mini-SAS SFF-8087 cables from your SAS HBA to the corresponding ports on the expander card. A common recommendation is to connect HBA port 1 to expander port 1, and HBA port 2 to expander port 2 for optimal throughput.
  - Verify that your HBA is compatible. The expander supports SAS 3 (12 Gb/s) links and is fully compatible with SAS 2 (6 Gb/s) links.
5. **Connect Drives:** Connect your SAS or SATA drives to the available Mini-SAS SFF-8087 ports on the expander card using appropriate cables.
6. **HBA Firmware Configuration (if necessary):** Some HBAs, particularly those with RAID capabilities, may require flashing to 'IT mode' (Initiator-Target mode) to function correctly with a SAS expander. This allows the HBA to pass through individual drive access directly to the operating system, which is necessary for the expander to manage multiple drives. Consult your HBA's documentation for specific instructions.
7. **Close and Power On:** Close the server chassis, reconnect power cables, and power on the server.

Verify that all connected drives are recognized by the system's BIOS/UEFI and operating system.

## 4. OPERATING INSTRUCTIONS

---

Once properly installed and configured, the HP 761879-001 SAS Expander operates transparently within the server environment. Its primary function is to extend the connectivity of your Host Bus Adapter (HBA) to a greater number of storage devices.

Drive management, including RAID configuration, formatting, and monitoring, will be handled by your server's operating system and the drivers/utilities associated with your Host Bus Adapter. Refer to your HBA's documentation and your operating system's storage management guides for detailed instructions on managing the connected drives.

The expander itself does not require direct user interaction for operation beyond initial physical installation and cable connections.

## 5. MAINTENANCE

---

The HP 761879-001 SAS Expander is a passive component and requires minimal direct maintenance. Adhering to general server maintenance practices will ensure its longevity and reliable operation.

### Recommended Maintenance Practices:

- **Secure Connections:** Periodically check all Mini-SAS SFF-8087 cable connections to ensure they are securely seated. Loose connections can lead to intermittent drive detection or performance issues.
- **Airflow and Cooling:** Ensure that the server chassis maintains adequate airflow to prevent overheating of internal components, including the SAS expander. Keep server fans clean and free of dust.
- **Dust Removal:** If operating in a dusty environment, periodically power down the server and use compressed air to gently clean dust accumulation from the expander card and surrounding components.
- **Firmware Updates:** While the expander itself typically does not have user-updatable firmware, ensure your Host Bus Adapter (HBA) firmware and server BIOS/UEFI are kept up-to-date. These updates can improve compatibility and stability.

## 6. TROUBLESHOOTING

---

If you encounter issues with the HP 761879-001 SAS Expander, consider the following troubleshooting steps:

### Common Issues and Solutions:

- **Drives Not Detected:**
  - Verify all Mini-SAS SFF-8087 cables are correctly and securely connected between the HBA, expander, and drives.
  - Ensure the expander card is properly seated in its PCIe slot.
  - Check the HBA's firmware. If the HBA is in a RAID mode, it might not pass through individual drives to the expander. Flashing the HBA to 'IT mode' (Initiator-Target) is often required.
  - Confirm that the drives themselves are functional by testing them individually or in a different setup.
- **Poor Performance / Slow Data Transfer:**

- Ensure you are using 12Gb/s compatible cables if your HBA and drives support this speed.
  - Verify the HBA's link speed. While the expander supports 12Gb/s, the overall speed is limited by the slowest component (HBA, cables, or drives).
  - Check server resource utilization (CPU, RAM) as these can impact storage performance.
- **System Instability / Crashes:**
    - Ensure the expander card is fully seated in its PCIe slot.
    - Check for any physical damage to the card or connectors.
    - Verify that the server's power supply is adequate for all installed components, including the drives connected via the expander.
    - Update server BIOS/UEFI and HBA firmware to the latest versions.

If issues persist after following these steps, consult the documentation for your specific server model and Host Bus Adapter, or contact technical support.

## 7. SPECIFICATIONS

<b>Model Number</b>	761879-001
<b>Brand</b>	HP (Hewlett Packard)
<b>Hardware Interface</b>	SAS (Serial Attached SCSI)
<b>Data Transfer Rate</b>	12Gb/s (SAS 3)
<b>Backward Compatibility</b>	6Gb/s SATA, SAS 2
<b>Supported Drives</b>	SAS, SATA
<b>Maximum Drive Bays</b>	Up to 26 (server configuration dependent)
<b>Server Support</b>	HP ProLiant DL380 Gen9, DL180 Gen9, ML350 Gen9
<b>Connectors</b>	Mini-SAS SFF-8087 (internal)
<b>Power Interface</b>	PCIe slot (for power only)
<b>Dimensions (LxWxH)</b>	15.5 x 12 x 3.25 inches
<b>Item Weight</b>	1.19 pounds
<b>Operating Voltage</b>	240 Volts (system dependent)
<b>UPC</b>	647213816099

## 8. WARRANTY AND SUPPORT

This HP 761879-001 SAS Expander is listed as a renewed product. Warranty coverage for renewed products is typically provided by the seller or through the Amazon Renewed Guarantee, if applicable. Please refer to your purchase documentation for specific warranty terms and conditions.

For technical documentation, drivers, and further support related to the original HP product, please visit the official Hewlett Packard Enterprise (HPE) support website and search for the model number 761879-001 or your specific server model.

