



The highlights of HP 10000 G2 Series Racks

technology profile

HP 10000 G2 Series Racks provide an integrated platform for mounting computing solutions and are designed for strength and durability. 10000 G2 Series Racks support HP ProLiant, Integrity, BladeSystem, NonStop, StorageWorks MSA, EVA and XP systems. 10000 G2 Series Racks combine structural integrity, cooling, and cable management. The rack has a 7-ply rolled frame, providing a high level of structural integrity. The 10000 G2 Series Racks are designated as a universal rack that is ideal for all HP rack mounted server and storage products. 10000 G2 Series Racks provide a new and improved front door design (with a bright-aluminum finish), front and rear door handles and latches, and easier to handle three-section side panels.

HP racks support static and dynamic loading of up to 2000 pounds. This allows for integrated server and storage shipping from HP factories world wide and for safely moving fully loaded HP racks within the data center.

HP racks and rack accessories ease the centralization, protection, organization, and access to hardware for servicing and upgrading. HP racks are flexible, secure, and designed to industry standards. HP racks are designed to be populated with all HP rack mountable products in both the customer site and HP factory CTO.

This document provides highlights of the advantages of HP racks. For detailed information on 10000 and 10000 G2 Series Racks, refer to the *Best practices for HP 10000 Series and HP 10000 G2 Series Racks* document, which is available on the HP website at <http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00883424/c00883424.pdf>.

CERTIFICATION AND REGULATORY COMPLIANCE

Product certification

The 10000 and 10000 G2 Series Racks are defined as non-functional mechanical storage bays and therefore, are not certified individually as a stand-alone product. The rack does not serve as an overall safety or EMI rated enclosure nor does it carry any other Agency compliant rating. However, any product intended for use in an HP rack should be individually certified as a stand-alone product. For example, HP Power Distribution products, such as uninterruptible power supplies (UPSs) and power distribution units (PDUs) are fully certified as stand-alone products.

Certain third-party products may not be fully certified as stand-alone products. Any product that does not meet stand-alone certification is not included in any HP-specified rack configuration and should not be installed in an HP rack.

HP General Specification for Environment compliance

HP General Specification for Environment (GSE) specifications prohibit or restrict the use of certain chemical compounds in products or in the manufacture of products. HP complies with the GSE specifications and restricts the use of these compounds in the development or manufacture of any HP product (including third-party supplier product).

Information Technology Equipment

The 10000 and 10000 G2 Series Racks are designed to comply with the applicable safety requirements for Information Technology Equipment (ITE) when the racks are configured with properly certified equipment. The 10000 and 10000 G2 Series Racks are considered compliant with ITE when the following conditions are met:

- The rack is populated with individually certified products.
- All installation guidelines and instructions are followed.

European Union Restriction of Hazardous Substances directive

The European Union Restriction of Hazardous Substances (EU RoHS) directive restricts the presence of certain substances in electrical and electronic products. The 10000 G2 Series Racks are EU RoHS compliant.

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The EU RoHS directive applies to all electrical and electronic products, including component parts, offered for sale in the European Union after July 1, 2006. The China Ministry of Information Industry is expected to adopt similar legislation with a timeline for compliance similar to the EU RoHS directive.

After July 1, 2006, HP electronic products will be more than 99.9 percent free of restricted substances except where granted an exemption under the EU RoHS directive. Exceptions may be granted when it is widely recognized that there is no technically feasible alternative to use of the restricted substance. The HP General Specification for Environment (GSE) already prohibits the use of many of the restricted substances in HP purchased parts, materials, and products.

For the HP position statement addressing the EU RoHS directive, refer to the following site:

www.hp.com/hpinfo/globalcitizenship/environment/pdf/leadposition.pdf.

Waste Electrical and Electronic Equipment directive

The directive on Waste Electrical and Electronic Equipment (WEEE) requires manufacturers to finance the recovery of waste from electrical and electronic equipment at the end of its useful life.

Any product or product packaging marked with the symbol in Figure 1 must not be disposed of with other household waste. The customer must dispose of the product by delivering the product to a designated collection point for the recycling of waste electrical and electronic equipment. For more information about locations to drop off equipment for recycling, contact a local city office, the household waste disposal service, or the business where the product was purchased.

Figure 1. WEEE disposal symbol



INTEGRATION SERVICES AND SOFTWARE

HP Factory Express

HP provides system integration services through HP Factory Express. Factory Express is a robust portfolio of flexible, pre-priced, configured, customized, and integrated factory solutions and deployment services. 10000 G2 Series racks can be customized, configured and integrated into ready-to-deploy solutions saving you time, money, and resources. HP offers an extensive portfolio of more than 50 services, such as:

- Software image management
- System customization
- Solution services

Contact your account manager to purchase HP products and take advantage of our Factory Express services. If you do not have an account manager, call 1 (800) 282-6672 and one will be assigned to you.

HP Factory Express support for third-party racks

10000 and 10000 G2 Series Racks are specifically designed and rigorously tested for shipping loaded with factory-integrated equipment with maximum dynamic load of 2000 pounds. All HP 10000 and 10000 G2 Series Racks are guaranteed to perform at this payload and racked HP equipment is under warranty while in transit to its destination. HP has not tested third-party racks to determine their capability of carrying the required payload and has not tested the shock absorption capability of third-party pallets. For this reason, HP will not guarantee orders for integrating HP equipment into third-party racks.

Additional resources

In addition to this integration option, HP also provides information links and contacts for rack and product compatibility in support of Build to Order on site locations. Refer to the following resources:

- For specific information, please see the HP Factory Express link: www.hp.com/go/factory-express.
- For additional information and Quick Specs: www.hp.com/go/rackandpower.

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THERMAL REQUIREMENTS

Air flows through 10000 and 10000 G2 Series Racks from the front to the rear of the rack. HP recommends that rack components only be installed on the front rails for many reasons including proper airflow. Roof-mounted Fan kits (available for 10000 and 10000 G2 Series Racks) may help meet additional thermal requirements of rack-mounted equipment and are used to keep the ambient temperature inside the rack within the specified operational limits of the equipment.

CAUTION

HP does not test and qualify third-party racks. If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- **Front and rear doors:** If the server rack includes closing front and rear doors, allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). Be sure that the option equipment does not impede airflow to the rack-mountable servers or increase the internal rack temperature beyond the specified maximum rating.
- **Side:** The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

Additional resources

- For information on options available for the 10000 Series Rack, refer to the *Rack options catalog* at <http://h18004.www1.hp.com/products/servers/proliantstorage/racks/10000series/documentation.html>.
- For information on deployment and configuration of multiple servers in a single rack, refer to the white paper entitled *Optimizing data centers for high-density computing* at <http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00064724/c00064724.pdf>.
- For information on the HP Modular Cooling System, refer to the *HP Modular Cooling System Site Preparation Guide* and white papers available at <http://h20000.www2.hp.com/bizsupport/TechSupport/Home.jsp?lang=en&cc=us&prodTypeld=329290&prodSeriesId=1155256>.

QUALIFIED SHIPPING

For CTO or Factory Express integration, 10000 and 10000 G2 Series Racks are available in the following heights: 14U, 22U, 36U, 42U, and 42U 800-mm wide. Empty racks are typically shipped on a standard wooden pallet. A horizontal shipping crate is also available for the 36U and 42U racks if severe distribution environments are anticipated. All racks integrated at Factory Express ship on a load-bearing shock pallet. When racking equipment on HP 10000 G2 Series Racks and shipping it to a separate location, it is important to follow these guidelines:

- Ship all configured racks on a shock pallet.
- Configure designated hardware in the rack.
- Follow the shipping recommendations of this document.
- Ship the configured rack in an upright position.

Rack shipping enclosures

The HP CTO shock pallet that ships with specific 10000 and 10000 G2 Series Rack models is designed for shipping the rack while fully loaded and configured with components. The shock pallet ensures that the rack can handle the weight of the installed components during shipment without damage to the rack or the equipment within.

With each rack on a shock pallet, a pallet ramp is included to support the dismount of the rack from the pallet.

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Each of the packing and unpacking procedures takes less than one-half hour and requires at least two people to complete. Unpacking instructions are included on the rack's external packaging.

NOTE

The 10000 and 10000 G2 Series Racks use different shock pallets.

NOTE

If a 10000 G2 CTO configuration requires an extension kit, order the extended depth SKUs. The addition of the extension kit to a standard depth rack is not supported in the CTO shipping environment.

NOTE

Onsite installation of the extension kit is supported with an option kit.

An HP shock pallet spares kit is recommended and can be obtained when moving a data center or relocating pre-configured racks. Contact your local HP reseller for information on spares kits.

INSTALLATION SERVICE

HP can arrange to have your rack installed by qualified service providers. This installation service covers the entire hardware installation sequence, from unpacking the components to routing cabling and running a test of the system. Installation can also be provided directly by HP authorized service providers.

If you need a pre-certified solution, contact the high performance technical computing (hptc) solutions group at <http://h71028.www7.hp.com/enterprise/cache/284965-0-0-225-121.html>.

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