



HP Performance-Optimized Datacenter

Data sheet



The HP Performance-Optimized Datacenter delivers a fast, flexible, and efficient path to datacenter ROI. It can be deployed within weeks instead of months, is 50 percent more energy efficient than typical datacenter build-outs, and offers advanced cooling infrastructure.

Containerized datacenters have arrived

Many datacenters were constructed about 10 years ago when power requirements and server densities were considerably lower. Power consumption and costs have increased dramatically over the last decade. Given the high cost of designing and building new datacenters, overcoming CAPEX constraints can be daunting. And when you combine this with the immediate need for expansion, the advantages of containerized datacenters become clear. They are a viable option when you are looking for easily deployable datacenters that can deliver significant cost savings and IT agility.

It has been estimated that by this year (2008), about half of the world's datacenters will be functionally obsolete due to insufficient power and cooling capacity.¹

Why HP Performance-Optimized Datacenter?

The HP Performance-Optimized Datacenter (POD) delivers best-in-class technology to provide flexible and energy-efficient datacenters that can reach you in as little as six weeks—slashing the time for datacenter build-out. It offers configurations optimized for power or density, enabling you to quickly upgrade or extend the capacity of your physical infrastructure. The HP POD comes to you as part of a complete datacenter portfolio, from strategy and planning to innovative products and comprehensive global support.

High Density

- Provides more density through support for up to 3,520 server nodes or approximately 12,000 hard drives per 40-foot container
- Delivers power capacity of 27kW+ per rack
- Offers the equivalent of 4,000 square feet of traditional datacenter space

¹ Bell, Gartner IT Infrastructure, Operations and Management Summit 2007, June 2007

It is estimated that at today's prices, the energy costs for running a server will exceed the costs of buying the server.²

Rapid Expansion

- Enables rapid datacenter capacity expansion and is shipped within six weeks from order.
- Delivers the equivalent of 4,000 square feet of datacenter space
- Provides capability for very high power density loads, using 1,800 watts per square foot

Flexibility

- Supports HP and third-party industry-standard hardware with front-to-back airflow
- Provides a small footprint, is weatherized, and can be deployed as a standalone solution or as an extension of an existing facility
- Uses full-depth, 19-inch standard IT racks, allowing you to deploy the same IT brands and form factors that you use in your datacenter

Energy Efficiency

- Provides close-coupled cooling
- Allocates only 4 percent of power to the blowers
- Delivers a Power Usage Effectiveness ratio of 1.25
- Allows for a warmer cold aisle through innovative HP POD design

Redundancy

- Built-in power and cooling redundancy including separate power feeds to the racks

Same Datacenter Experience and Serviceability

- Allows you to use your IT racks the same way you do in your datacenter—providing complete access to front and rear of racks, without having to move them

Deployment and Support

- Offers a complete global portfolio of HP POD Infrastructure Services, ranging from basic deployment to complete management

Ideal customer deployment scenarios for the HP POD

The HP POD can help you to meet the following challenges

Aging Datacenters: Built for yesteryear's requirements, the aging datacenter is out of power and cooling capacity. In this scenario, supporting the increasing power density and thermal output of today's IT hardware becomes difficult. Faced with the need to expand your own datacenter environment, companies have typically built out new datacenter space, with high costs and long lead times. Instead, you can add datacenter space as you need it using the HP POD. Because of the short lead time, you can order and pay for the additional capacity as you grow, instead of forecasting future IT needs and construction project costs.

Disaster Recovery: Disaster recovery sites are crucial, but with energy costs skyrocketing, there is often no budget for new locations. However, this does not have to deter you. Location flexibility allows the HP POD to be placed in lower energy cost areas, reducing the cost of your disaster recovery plan. The HP POD's small footprint allows it to be placed on existing real estate.

² Belady, Electronics Cooling Magazine, February 2007

Alternate Datacenter Strategy: Traditional brick-and-mortar datacenter design requires significant forecasting and planning for future growth, which results in having to build capacity that exceeds your current requirements. It also limits IT to the capacities provided in the design. However, when you decide on a datacenter strategy built around the HP POD, you can benefit from new levels of flexibility in deploying IT resources. This enables rapid expansion, as required, in standardized and more manageable increments. This reduces risks in future growth planning. In addition to CAPEX being managed more wisely, OPEX is decreased by reducing, or eliminating unused datacenter capacity.

Frequently Asked Questions

What kind of racks are in the HP POD?

There are 22 50U full-depth industry-standard racks inside a 40-foot HP POD.

What IT equipment do the HP POD racks support?

HP and third-party industry standard IT equipment with front-to-back airflow.

Can the HP POD operate outdoors?

The HP POD is weatherized and can operate outdoors, but some minimal shelter is recommended to aid in security and serviceability.

What preparations must be made to deploy the HP POD?

Provisions for chilled water, power, and communication connections must be made. More information is available in the installation guide.

What types of services are offered for the HP POD?

Global deployment and support services are available for the HP POD including site preparation, deployment, and ongoing maintenance and support. Additionally, IT hardware configuration services are available through Factory Express; datacenter consulting and design services through EYP MCF, an HP company; financing options through HPFS.

How does this compare to a traditional datacenter in terms of energy efficiency?

On an average, typical datacenters have a PUE ratio ranging from 1.7–2.0, which means that twice as much energy goes into the datacenter than what is required by IT equipment. However, the HP POD has a PUE ratio of about 1.25.

HP Services

HP POD Infrastructure Services provide complete integration, deployment and support for your datacenter container environments. Designed specifically to help you build confidence and enhance your HP POD solutions, HP services and support can help you create a highly manageable service solution. **HP Factory Express services** will remotely build your HP POD solution, to your specific design into a ready-to-deploy solution. HP provides expert onsite deployment assistance for installation and setup of your HP POD infrastructure, helping integrate your HP POD solution into your existing datacenter IT infrastructure. And HP POD proactive support services provide ongoing service management to help you build and maintain a highly available and secure POD-based IT infrastructure that adapts to change. We work with you to increase availability across all the components of your POD and related IT environments. And beyond the container, HP Services Data Center Transformation portfolio is designed to address the most pressing datacenter and business issues including aging facilities, energy/space efficiency, business continuity, virtualization, and automation needs, delivering improved service levels to business.

How does serviceability of IT equipment compare to that of traditional datacenters?

The HP POD has a 36-inch cold aisle, allowing IT equipment to be fully removed and serviced. Additionally, rear IT access is provided by four sets of large double doors on the hot aisle. IT serviceability is designed to allow the same access as a traditional datacenter.

How fast can HP ship the POD?

The HP POD can be shipped from the factory in as little as six weeks from receiving a purchase order.

What options are available for the POD?

There is a standard density HP POD, as well as a higher density HP POD.

For more information

To learn more about HP POD products, software and services visit: <http://www.hp.com/products/pod>

Dimensions				
Length (plus clearance)	40 ft (plus 1.5 ft.)			
Width	8 ft 6 in.			
Height	9 ft 6 in.			
Site length requirement	48 ft			
Site width requirement	15 ft 4 in.			
Site height requirement	9 ft 6 in.			
Max Container Weight	100,000 lbs.			
Max Equipment Weight per Rack	3000 lbs			
Standard ISO Container	Yes			
Power	Standard Density	Standard Density Redundant	High Density	High Density Redundant
Container Load Limit	450 kW	291 kW	600 kW	380 kW
Input power voltage	415V, 3 phase + ground + neutral	415V, 3 phase + ground + neutral	415V, 3 phase + ground + neutral	415V, 3 phase + ground + neutral
Voltage to rack	240V, phase to neutral	240V, phase to neutral	240V, phase to neutral	240V, phase to neutral
Max power per rack (kW)	17.2 kW+	up to 17.2 kW	up to 34.5 kW	17.2 kW
Cooling				
Cooling technology	Chilled Water to Heat Exchanger, Hot/Cold Aisle			
Flow rate	240 gpm			
Temperature (Max Inlet)	55° to 75°F			
Flange/Pipe diameter	4"/150#			
Airflow per rack	1800 cfm			
Rack Configuration				
Rack Type	19" Industry Standard Full Depth			
Support for 3rd party IT Equipment	Yes			
Max number server racks	22			
Available U space per rack	50U			
Total Supported rack space	1100U			
Max server nodes per container	up to 3500			
Maximum Blade slots per rack	80			
Facilities Functionality				
Smoke detection (VESDA)	Yes			
Fire suppression	Optional			
Emergency power off (EPO) switch	Included			
Humidity Monitoring	Yes			
Humidity Control	Standard			
BMS	Included			
Networking	2-1/2" pass through (6 at each end)			
Security	Key Locks Std., Others Optional			
Environmental Requirements				
Operating min/max temperature	0°F/130°F (-20°F/130°F with optional thermal paint)			
Operating humidity range	0-100%			
Operating altitude	10000' max			

Technology for better business outcomes

To learn more, visit www.hp.com/products/pod

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