



HPE SMALL BUSINESS SOLUTIONS FOR GENERAL PURPOSE



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ABOUT THIS CONFIGURATION GUIDE

HPE Small and Medium Business Solutions

HPE Small and Medium Business Solutions are validated configurations designed to meet a variety of IT workloads and sizes for small- to medium-sized businesses. It consists of a base system plus options and software to make up a complete solution. In most cases, these combinations are the foundation for Flex Offer special pricing. Note that pricing and special offers change much more frequently than these configurations and are subject to change without notice.

- Remote Worker (VDI)—Fast and secure remote access for all your apps and data from anywhere
- Small Office Deployment—A simple approach for your first complete IT solution including wired and wireless networking
- General Purpose—Low-cost solutions for smaller environment with customizable functionality
- Business Continuity—Protect data and applications from catastrophic loss
- Virtualization—Run multiple workloads on a single server
- Shared Storage—A single storage pool for multiple servers with recommended workload configurations
- Hyperconverged Infrastructure (HCI)—Software-defined storage for high availability virtualization
- Database and Application—Host line-of-business database and applications on-premises

HPE Small and Medium Business Solutions for General Purpose

HPE Small and Medium Business Solutions for General Purpose are HPE ProLiant servers designed to be flexible, low-cost configurations to meet the needs of most small to medium business workloads that do not need more expensive specialized configurations. They start with a base server and then provide a set of add-on functional modules to choose from to complete the configuration for a general workload.

Configuration disclaimer

The configurations in this guide have been tested and validated to meet the stated solution capacity for a variety of typical small to medium business workloads. While they are complete solutions as configured, they can be considered reference configurations and may be sensibly modified as needed to achieve your unique solution requirements as long as the configuration specifications are not reduced. They are typically a minimum configuration for the solution size, so if a smaller configuration is needed it is often more advantageous to scale up from a smaller configuration rather than scale down from a larger configuration.

The stated capacity for workloads in this guide is highly subjective and depends on the environment they are deployed to. Use these values as a guide—not as an absolute. The stated capacity is also based on default settings for the server and storage options specified in the configuration. Stated capacity does not take into account all of the possible system settings or option modifications available, which can greatly impact the configuration's stated capacity. For example, certain BIOS settings are not factored into the solution capacity by default but can potentially and greatly increase the number of virtualized desktop workloads possible in a VDI or virtualization solution. Another example would be the increased performance that can be achieved by replacing hard disk drives with solid-state drives or by adding more memory.

Also, note that this guide is updated from time to time, and these configurations are subject to change without notice, as solution components can be discontinued before this guide is next updated. When substituting discontinued options be sure to replace them with comparable options that match or exceed the discontinued option specifications.

Use the iQuote Solutions Tile

Unless otherwise noted, all of the configurations in this guide are available in the **Solutions** tile on the iQuote home page. iQuote is an online sales enablement web application that simplifies the process of configuring, quoting, and purchasing HPE products and solutions from a single location. The **Solutions** tile provides a quick and convenient way to select the complete solutions presented in this guide without having to manually configure them in iQuote. After selecting the desired solution in iQuote, it can be modified as needed. You can access the universal version of iQuote through iquote.hpe.com or contact your preferred HPE authorized partner or distributor for live pricing.



BUILD YOUR SOLUTION

Step 1: Determine your solution requirements

HPE SMB Solutions for General Purpose are simple configurations designed for low-demand workloads typical of SMBs. They are flexible t-shirt-sized configurations that are ideal for situations where a specialized server is just too much server.

Some examples of low demand workloads and their characteristics would be:

- File and print—Primarily a storage capacity for file storage with sufficient memory to run print jobs and the operating system
- Infrastructure (for workloads such as Active Directory, DNS, DHCP)—Primarily a memory capacity to load various databases into memory for service responsiveness, with sufficient storage for the operating system and infrastructure data
- Utility (for workloads such as endpoint security and management)—Primarily a memory capacity with sufficient performance storage capacity to improve analysis and reporting functions
- Multifunction—A balance of memory and storage with sufficient capacity and performance capable of handling mixed workloads and even light virtualization to help segregate workloads

Many other functions are typically performed on these types of servers, but these configurations should cover the majority of them.

Capacity planning

A key part of determining the solution requirements is understanding how each workload type consumes server resources.

File and Print

The General Purpose—File and Print Module is designed to provide network file and print services for network clients. Capacity requirements can be widely variable, making them difficult to determine. But even if you are starting a new organization with no storage history, you can estimate the capacity needed by one of these two methods:

- Analyze existing storage
- Estimate storage needs

Method 1: Analyze existing file storage

Every file system tracks the date a file has created and the current size of the file. This information can be used to determine storage usage over time. There are plenty of tools available on the web to acquire file utilization data, but even a simple script that dumps these attributes into a .csv file can be used to analyze storage usage and provide a starting point to calculate the storage requirements of the new file server.

A Microsoft Windows PowerShell script can be run on a specific shared folder to get a .csv file of a list of the creation date and size of all files in the folder and all of its subdirectories, which can then be analyzed in a spreadsheet.

Copy the entire command from the following and paste it into a text editor (such as Notepad). Replace “z:\” with the appropriate file path of the folder to be analyzed. The path for both the folder to be analyzed and the location of the resulting .csv file must be enclosed in double quotes. Then, copy the edited version of the script from the text editor, paste it into the PowerShell command line, and press **Enter**. The resulting .csv file will be stored as “export.csv” in the folder that was analyzed.

```
Get-ChildItem -r "Z:\\" | select CreationTime,Length | Export-Csv -Path "Z:\export.csv" -En UTF8 -NoType -Delim ','
```

NOTE

This script works only in Microsoft Windows environments and does not automatically check your entire storage environment across multiple stores. You must run this script on the top-level folder of each file system that will be migrated and the results from each export summed to know the full storage capacity currently in use.

Also, note that this script may not capture data on **hidden** or **system** files or any files that you do not have permission to access, depending on file system settings and the permissions of the user running the script.

Finally, due to PDF formatting, some characters in the previously mentioned PowerShell command, such as the quotes, may need to be edited in Notepad or other text editors to be used in PowerShell.



Method 2: Estimate storage needs

If you don't have a file history to analyze, such as when establishing a new office, you can create a general estimate using the following example:

1. Define storage user profiles.

Organizations typically have a mix of user profiles with different storage needs (adjust the **bolded** values for files per day, average file size, and profile mix to fit your organization).

- a. Office worker: Creates **10** files per day averaging **5 MB** = 50 MB per day (MBpd)
- b. Media worker: Creates **5** files per day averaging **15 MB** = 75 MBpd
- c. Data analyst: Creates **7** files per day averaging **10 MB** = 70 MBpd

2. Determine the organizational mix of storage profiles.

- a. Office worker: **60%**
- b. Media worker: **10%**
- c. Data analyst: **30%**

3. Calculate needs based on the organization size and the expected service life of the server.

- a. 5-year service life = approximately 1,175 workdays (235 workdays per year after vacations and holidays)
- b. Capacity required = ([profile-a MBpd x (.6 x company size)] + [profile-b MBpd x (.1 x company size)] + [profile-c MBpd x (.3 x company size)] x 1,175)

See the following table for an example of estimated storage needs based on this example profile mix:

TABLE 1. File server storage capacity planner

User profiles	User profile (235 workdays per year)					Company size				
	Profile mix	Average files/day	Average file size	Daily files	5-year capacity	10 users	25 users	50 users	100 users	250 users
Office worker: Low file count and size	60%	10	5 MB	50 MB	58.7 GB	0.4 TB	0.9 TB	1.8 TB	3.5 TB	8.8 TB
Media worker: Low file count, large file size	10%	5	15 MB	75 MB	88.1 GB	0.1 TB	0.2 TB	0.4 TB	0.9 TB	2.2 TB
Data analyst: Medium file count and size	30%	7	10 MB	70 MB	82.2 GB	0.2 TB	0.6 TB	1.2 TB	2.5 TB	6.2 TB
Total profile mix (must = 100)	100%				5-year total	0.7 TB	1.7 TB	3.4 TB	6.9 TB	17.2 TB

Infrastructure

The General Purpose—Infrastructure Module is designed to provide network connectivity and security for network client workstations by providing such services as Microsoft Active Directory—Directory Services (ADDS), Domain Name Service (DNS), and Dynamic Host Configuration Protocol (DHCP) services. Additionally, they can provide software-defined networking (SDN).

Capacity planning for infrastructure services is far less complicated than that of **File and Print**. They are usually light on resource requirements, whether they run on bare metal or a virtual machine. Even the most basic servers available today with modest memory and storage resources can easily handle typical SMB network infrastructure service workloads.

In general, storage is the slowest component in most servers, but even the slowest HDDs can easily handle SMB scale infrastructure workloads when compensated for by ensuring there is sufficient memory to load the various infrastructure databases and processes completely in memory, thus minimizing the need to read data from disk. As our current line of HPE ProLiant servers all start with at least 16 GB of RAM, they are more than sufficient to meet this requirement for the majority of small businesses. Disk capacity requirements are also very minimal, and our smallest disk drives are very adequate to support infrastructure services for small to medium to even midmarket-sized customers.

The General Purpose—Infrastructure Module makes use of low capacity read-intensive SSDs that are price comparative to available HDDs, consisting of a pair of SSDs to be configured in a RAID 1 mirror. You can of course choose HDDs, but the SSDs will provide better performance during peak demand such as logon/logoff periods.



One note of caution—Given that infrastructure services are not very demanding, there is a great deal of temptation to add other functions such as file and print or running a web server; however, it is a best practice to keep infrastructure services isolated from other workloads by choosing one of these strategies:

- Run only infrastructure services on a lightly equipped **bare-metal** server
- Run infrastructure services in a virtual machine on a more robust server, keeping other workloads on the server in virtual machines as well to reduce the likelihood of other workloads causing an outage of infrastructure services

Another best practice is to ensure you have more than one infrastructure server in your network for redundancy in case of a server failure.

Utility

The General Purpose—Utility Module is designed to support such workloads as client endpoint management, antivirus management, and network management. Like the Infrastructure Module, these utility functions are generally light workloads and require little in the way of resources. The exception being when peak demand events are triggered such as pushing patches or updates and running comprehensive status reports or data collection for dashboards. And storage of patch repositories put additional capacity requirements on the solution. Due to these additional demands, the Utility Module supplies additional storage and memory resources to ensure suitable performance.

Multifunction

The General Purpose—Multifunction Module is equipped to perform two or more of the previously discussed workloads by providing increased storage and memory capacity sufficient to meet the needs of most small- to medium-sized businesses.

Step 2: Choose your solution

Now that you know your solution type and capacity requirements, you can easily select an HPE SMB Solutions for General Purpose from Table 2.

Table 2 provides an overview of the current HPE SMB Solutions for General Purpose portfolio to guide your selection based on your strategy and capacity requirements.

TABLE 2. Overview of HPE Small Business Solutions for General Purpose

Base platform	Solution size	CPU	Modules			
			File and Print	Infrastructure	Utility/endpoint management	Multifunction
HPE ProLiant MicroServer Gen10 Plus	10 users	Intel® Xeon® E-2224 (4 core / 3.4 GHz)	16 GB RAM 1 TB HDD	16 GB RAM 240 GB SSD	32 GB RAM 480 GB SSD	32 GB RAM 720 GB SSD
HPE ProLiant ML30 Gen10 Plus	25 users	Intel Xeon E-2314 (4 core / 2.8 GHz)	16 GB RAM 2 TB HDD	16 GB RAM 480 GB SSD	32 GB RAM 960 GB SSD	32 GB RAM 1.44 TB SSD
HPE ProLiant ML110 Gen10	50 users	Intel Xeon Scalable 4208 (8 core / 2.1 GHz)	16 GB RAM 4 TB HDD	16 GB RAM 480 GB SSD	32 GB RAM 960 GB SSD	64 GB RAM 1.44 TB SSD
HPE ProLiant ML350 Gen10	100 users	Intel Xeon Scalable 3206R (8 core / 1.9 GHz)	32 GB RAM 12 TB HDD	32 GB RAM 960 GB SSD	64 GB RAM 1.92 TB SSD	96 GB RAM 2.88 TB SSD
HPE ProLiant DL20 Gen10 Plus	25 users	Intel Xeon E-2314 (4 core / 2.8 GHz)	16 GB RAM 2 TB HDD	16 GB RAM 480 GB HDD	32 GB RAM 960 GB SSD	64 GB RAM 960 GB SSD
HPE ProLiant DL160 Gen10	50 users	Intel Xeon Scalable 3206R (8 core / 1.9 GHz)	16 GB RAM 4 TB HDD	16 GB RAM 480 GB SSD	32 GB RAM 960 GB SSD	64 GB RAM 1.44 TB SSD
HPE ProLiant DL380 Gen10	100 users	Intel Xeon Scalable 3204 (6 core / 1.9 GHz)	32 GB RAM 12 TB HDD	32 GB RAM 960 GB SSD	64 GB RAM 1.92 TB SSD	96 GB RAM 2.88 TB SSD

Note: Usable disk capacity depends on the RAID level configured; see configuration details for more info.



Table 3 and 4 provides a detailed description of the hardware configurations of the current HPE SMB Solutions for General Purpose.

TABLE 3. HPE SMB Solutions for General Purpose (tower based)

	HPE ProLiant MicroServer Gen10 Plus	HPE ProLiant ML30 Gen10 Plus	HPE ProLiant ML110 Gen10	HPE ProLiant ML350 Gen10
Solution capacity	10 users	25 users	50 users	100 users
Form factor	Micro tower server 4 x LFF non-hot-plug bays	Tower server 4 x LFF hot-plug bays	Tower server 4 x LFF hot-plug bays	Tower server 4 x LFF hot-plug bays
Processor	Intel Xeon E-2224 (4 core / 3.4 GHz)	Intel Xeon E-2314 (4 core / 2.8 GHz)	Intel Xeon Scalable 4208 (6 core / 2.1 GHz)	Intel Xeon Scalable 3206R (6 core / 1.9 GHz)
Memory	1 x 16 GB	1 x 16 GB	1 x 16 GB	1 x 16 GB
Disk controller	HPE S100i Gen10 (embedded)	Intel® VROC (embedded)	HPE S100i Gen10 (embedded)	HPE S100i Gen10 (embedded)
Network	4 x ports 1GbE	2 x ports 1GbE	2 x ports 1GbE	4 x ports 1GbE
Power supply	1 x 180W (external power supply)	1 x 350W	1 x 550W	1 x 500W
OS software	Microsoft Windows Server 2022 Standard Microsoft Windows Server 2019 Standard			
File and Print Module	2 x 1 TB SATA HDD	2 x 2 TB SATA HDD	2 x 4 TB SATA HDD	1 x 16 GB DDR4 DIMM 4 x 4 TB SATA HDD
Infrastructure Module	2 x 240 GB SATA SSD	2 x 480 GB SATA SSD	2 x 480 GB SATA SSD	1 x 16 GB DDR4 DIMM 2 x 960 GB SATA SSD
Utility Module	1 x 16 GB DDR4 DIMM 3 x 240 GB SATA SSD	1 x 16 GB DDR4 DIMM 3 x 480 GB SATA SSD	1 x 16 GB DDR4 DIMM 3 x 480 GB SATA SSD	3 x 16 GB DDR4 DIMM 3 x 960 GB SATA SSD
Multifunction Module	1 x 16 GB DDR4 DIMM 4 x 240 GB SATA SSD	1 x 16 GB DDR4 DIMM 4 x 480 GB SATA SSD	3 x 16 GB DDR4 DIMM 4 x 480 GB SATA SSD	5 x 16 GB DDR4 DIMM 4 x 960 GB SATA SSD

TABLE 4. HPE SMB Solutions for General Purpose (rack based)

	HPE ProLiant DL20 Gen10 Plus	HPE ProLiant DL160 Gen10	HPE ProLiant DL380 Gen10
Solution capacity	25 users	50 users	100 users
Form factor	Rack server 2 x LFF hot-plug bays	Rack server 4 x LFF hot-plug bays	Rack server 8 x LFF hot-plug bays
Processor	Intel Xeon E-2314 (4 core / 2.8 GHz)	Intel Xeon Scalable 3206R (8 core / 1.9 GHz)	Intel Xeon Scalable 3204 (6 core / 1.9 GHz)
Memory	1 x 16 GB	1 x 16 GB	1 x 16 GB
Disk controller	Intel VROC (embedded)	HPE S100i Gen10 (embedded)	HPE S100i Gen10 (embedded)
Network	2 x ports 1GbE	2 x ports 1GbE	4 x ports 1GbE
Power supply	1 x 290W	1 x 500W	1 x 500W
OS software	Microsoft Windows Server 2022 Standard Microsoft Windows Server 2019 Standard		
File and Print Module	2 x 2 TB SATA HDD	2 x 4 TB SATA HDD	1 x 16 GB DDR4 DIMM 4 x 4 TB SATA HDD
Infrastructure Module	2 x 480 GB SATA SSD	2 x 480 GB SATA SSD	1 x 16 GB DDR4 DIMM 2 x 960 GB SATA SSD
Utility Module	1 x 16 GB DDR4 DIMM 2 x 960 GB SATA SSD	1 x 16 GB DDR4 DIMM 3 x 480 GB SATA SSD	3 x 16 GB DDR4 DIMM 3 x 960 GB SATA SSD
Multifunction Module	3 x 16 GB DDR4 DIMM 2 x 960 GB SATA SSD	3 x 16 GB DDR4 DIMM 4 x 480 GB SATA SSD	5 x 16 GB DDR4 DIMM 4 x 960 GB SATA SSD



Other considerations

Most of the HPE Small and Medium Business Solutions for General Purpose can be expanded with more memory and storage to increase the capacity of the solution. Finally, some HPE Small Business Solutions can be equipped with redundant power supplies for additional availability protection.

NOTE

Configurations are subject to change as options can EOL/DISC. Be sure to replace with comparable options that match the option specifications.

SERVICES AND FINANCING**HPE Pointnext Services**

A services partner built for your business today and tomorrow, HPE Pointnext Services enables you to meet availability commitments with a variety of coverage levels and response times and easily connect to HPE for faster problem resolution. HPE Pointnext Services offers comprehensive hardware and software services to help increase the availability of IT infrastructure and extend in-house IT staff with HPE expertise. You can do more with less by leveraging service tools with built-in simplification and remote management tools.

Service offerings include:

- HPE Pointnext Complete Care
- HPE Pointnext Tech Care
- HPE Lifecycle Services

NOTE

HPE recommends HPE Pointnext Tech Care as the minimum recommended service level for HPE Small Business Solutions.

HPE Financial Services

Simple IT equipment financing, asset lifecycle solutions, and SMB finance option designed to help your business seize opportunities to evolve and thrive. hpe.com/us/en/services/finance-it-technology.html

HPE Subscription services allow SMBs to select a complete solution from predefined options that include best-in-class compute, storage, and networking hardware; software; accessories; and worry-free support services for a predictable monthly subscription fee. No large, up-front purchase to make—just subscribe, use, return, and renew. No worries about what to do with old equipment. Need to expand? Simply add more hardware or services. HPE channel partners can offer hardware, software, and support services in a single solution and deliver it in one simplified subscription contract.

HPE Technology Refresh program replaces ownership with predictable monthly or quarterly payments and provides for a shorter, routine refresh cycle every 24 to 48 months. SMBs don't have to be locked into holding onto aging IT equipment and delaying upgrades.

SIMPLE, SECURE, AFFORDABLE

HPE Small Business Solutions lower the cost of accessing easy-to-use on-premises and hybrid cloud solutions without sacrificing security. To learn more about HPE Small Business Solutions, visit the resources included in this document, or contact your HPE or authorized partner representative. Find an IT reseller close to you at findapartner.hpe.com/.



RESOURCES

- [HPE Small Business Solutions for General Purpose solution brief](#)
- [HPE ProLiant Server QuickSpecs](#)
- [HPE ProLiant Server Options](#)
- [IT Support Services](#)
- [Get connected](#)
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