HPE Small Business Solutions for Remote Workers—VDI

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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. They consist 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 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 Remote Workers—VDI

HPE Small and Medium Business Solutions for Remote Workers—VDI are HPE ProLiant servers configured to protect business data and applications from catastrophic loss due to data corruption, system failure, malicious actors, and ransomware. Additionally, they provide data archival for long-term storage to "air-gap" protected data and to meet regulatory, financial, and legal requirements.

Remote Worker—VDI Solutions are available in Standard or Performance configurations. Standard configurations are based on HPE ProLiant Gen10 and Gen10 Plus servers with 2nd generation Intel® Xeon® Scalable and 2nd generation AMD EPYC™ processors, and feature SATA SSD storage volumes. Performance configurations are based on HPE ProLiant Gen10 Plus and Gen10 Plus v2 servers with 3rd generation Intel Xeon Scalable and 3rd generation AMD EPYC processors, and feature SAS SSD storage volumes for greater performance compared to Standard solution configurations.

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 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.

Note also 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 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 via iquote.hpe.com, or contact your preferred HPE authorized partner or distributor for live pricing.

Build your solution

Step 1: Determine your session type and user profile

HPE Small Business Solutions for Remote Workers—VDI are sized by the approximate number of remote users they support, which is highly dependent on the session type and user profiles.

Note

The exact number of remote users supported by a VDI solution cannot be precisely determined because each deployment environment is unique and users in that environment have unique and dynamic requirements. However, the solutions in this configuration guide have been validated for typical small to midsize business (SMB) workloads, which can then be used as a single server solution, or as building blocks for multiserver solutions, as described in the following sections.

Understanding your expected workload needs is critical to sizing your solution. There are two key factors in determining the appropriate solution configuration and sizing.

Session type defines whether the user's virtual desktop environment is persistent or non-persistent.

- **Persistent** sessions present the user with a customizable session that is unique to that user. When the user logs off, the session is "remembered" and when the user returns, they come back to their assigned environment, with any changes persisted.
- **Non-persistent** sessions present the user with a standardized environment that is shared by other users. The session is not "remembered" when the user logs off. System requirements for non-persistent solutions are often smaller than persistent solutions because much of the system resources are shared among the users.

User profiles are a way to categorize the typical workloads that different types of users will place on the VDI solution. These profiles are typically categorized as follows:

- **Task user (light):** Basic data entry, simple office applications, static web content, email.
- **Knowledge user (medium):** Administrative analysis, light data analysis, sophisticated office applications, dynamic web content (or multiple tabs), Microsoft products, email, video conferencing.
- **Power user (heavy):** Software engineering, content creation, database analysis, dynamic web creation, Microsoft products, video conferencing, email.
- **Multimedia/engineering user (very heavy):** These typically have greater system requirements including high-resolution, fast-frame-rate tasks like video editing, graphic design, computer aided design/manufacturing (CAD/CAM). These solutions typically require accelerators, such as graphics processing units (GPUs), to perform extensive graphic display rendering to the remote device. Solutions appropriate for this user profile will be added to the HPE Small Business Solutions for Remote Workers—VDI portfolio in the near future.

Generally, non-persistent sessions require fewer system resources than persistent sessions, and lighter user profiles require fewer system resources than heavier user profiles.

Step 2: Choose your solution

Knowing your session type and user profile can help you home in on the right solution. To further narrow down your selection, HPE Small Business Solutions for Remote Workers—VDI are grouped by the software they're based on. Our current portfolio of available configurations are as follows, in order of increasing complexity and capacity:

- **Remote Desktop Services (RDS):** While not specifically part of the remote workers portfolio, HPE Small Business Solutions for Small Office Deployment are validated to provide limited VDI capability. These solutions provide non-persistent VDI sessions using Windows Server RDS. This configuration is the easiest to deploy, requiring only that the server be configured for RDS and the desired applications and RDS licenses be installed. A session gateway is not required if the clients are Microsoft Windows clients, and are on the internal network or access the session via a VPN connection to the internal network.
- **VMware Horizon®:** The VMware Horizon solution provides individual VMs for each user for fully persistent user environments. Where VMware Horizon excels is in the flexibility and automation that come from integration with VMware®'s entire suite of products. The VMware Horizon solution requires a session gateway, which can be deployed on-premises in the private cloud or DMZ, or VMware Horizon® Cloud Service.

Note

A session gateway acts as both a security gateway that isolates the VDI server from the public internet, and as translator providing connectivity for dissimilar clients such as using an iOS or Android™ device to connect to a Windows VDI solution. The session gateway is typically deployed as either a service or a virtualized appliance deployed outside of the internal network, and can be operated on-premises, in a private- or public-cloud. The configurations described in this guide focus on the VDI host server, not the session gateway. Refer to the VDI software deployment resources if the session gateway is to be deployed as part of the solution.

Table 1 shows the available configurations, with general guidance on which base configuration to select based on the session type, user profile, and number of users.

Table 1. Sizing for HPE Small Business Solutions for Remote Workers—VDI

Platform	Software	Session type	Blended user profiles*	Task user profile	Knowledge user profile	Power user profile
Standard Remote Worker Solutions—featuring 2nd generation Intel® and AMD processors and SATA solid-state drives						
HPE ProLiant ML30 Gen10 Plus	**Microsoft RDS****	Non-persistent	-	10	-	-
HPE ProLiant DL20 Gen10 Plus	**Microsoft RDS****	Non-persistent	-	20	-	-
HPE ProLiant DL360 Gen10	**VMware Horizon (Small Config)**	Persistent	18–38	22–46	13–31	9–23
HPE ProLiant ML350 Gen10	**VMware Horizon (Medium Config)**	Persistent	24–48	29–58	19–38	14–29
HPE ProLiant DL360 Gen10	**VMware Horizon (Medium Config)**	Persistent	24–48	29–58	19–38	14–29
HPE ProLiant DL380 Gen10	**VMware Horizon (Large Config)**	Persistent	38–76	46–96	28–63	18–46
Performance Remote Worker Solutions—featuring 3rd generation AMD processors and SAS solid-state drives						
HPE ProLiant DL325 Gen10 Plus v2	**VMware Horizon (Small Config)**	Persistent	39	45	30	21
HPE ProLiant DL325 Gen10 Plus v2	**VMware Horizon (Medium Config)**	Persistent	51	62	41	31
HPE ProLiant DL365 Gen10 Plus	**VMware Horizon (Small Config)**	Persistent	39–75	45–90	30–60	21–40
HPE ProLiant DL365 Gen10 Plus	**VMware Horizon (Large Config)**	Persistent	51–104	62–126	41–80	31–53
HPE ProLiant DL385 Gen10 Plus v2	**VMware Horizon**	Persistent	75–149	90-180	60–112	43–75

* The number of users supported are for a single profile type on a single server and are shown as a range starting at the default hardware configuration and going to a maximum user count when the configuration is fully expanded by adding CPU, memory, and storage options. The Blended user profile is a mix of the other three user profiles served by a single server in the following proportion: task users: 65%; knowledge users: 25%; power users: 10%.

** While they are not part of the HPE Small Business Solutions for Remote Workers portfolio, the RDS solutions are HPE Small Business Solutions for Small Office Deployment, which are designed to be deployed as a single server capable of a variety of small business IT functions, including VDI using a non-persistent RDS deployment. They are validated for the stated number of non-persistent Task User profiles. Further information about these solutions can be found in the HPE Small Business Solutions for Small Office Deployment Configuration Guide.

Step 3: Size your solution

Sizing VDI solutions can be extremely challenging. This is primarily due to the fact that remote user workloads differ greatly from one deployment to the next, and each user's workload needs change both during the session and from session to session. The type of session, persistent or non-persistent, also has a significant impact on the solution hardware sizing as much of the system requirements are often shared among the sessions. In addition, HPE ProLiant Gen10 servers can handle anywhere from a handful of sessions to more than one hundred sessions, depending on the configuration and expected workload. This variability frequently results in either under-provisioning the solution, leading to poor performance, or over-provisioning, which is costly.

The sizing discussion that follows is focused on persistent session types since that is the session type that applies to most of the solutions discussed in this guide.

Typically, a VDI solution is sized and deployed using one of two methods.

- **For smaller deployments (one to three servers):** The average user workload is estimated and then padded to account for unknowns like login boot storms or burst user activity. This method allows for fast deployment, but at a greater risk of under-/over-provisioning.
- **For larger multiserver scenarios:** The VDI deployment is planned in stages, starting with a pilot stage that is designed to get a more precise estimate of the actual workload from a representative sample of the user profiles, and then completing the deployment in one or more follow-up stages using the results from previous stages to adjust the configurations to meet performance needs. This reduces the risk of over-/under-provisioning, but increases the complexity and duration of the deployment, and quite possibly the cost.

HPE Small Business Solutions for Remote Workers—VDI combine these two methods to provide fast, reliable deployment with a reasonable expectation of good performance, reducing risk, and saving money. All HPE Small Business Solutions are validated and tested to support the stated number of users and profile types, based on an estimated workload and applying best practices. HPE has tested each configuration for the following scenarios:

Per-user workload requirements by scenario	100% task user scenario	100% knowledge user scenario	100% power user scenario	Blended profile scenario
Virtual CPU (vCPU)	2	3	4	See the following section "Sizing for blended user profiles"
Memory (GB)	4	6	8	
IOPS	15	30	45	
Storage (GB)	30	60	90	

Note

These per-user workloads are estimates, based on average values commonly used in current VDI configurations. Per-user workload requirements are extremely subjective and can vary greatly between actual versus estimated usage.

Sizing for blended user profiles

Blended user profiles allocate a percentage of the total workload to all three of the above workload scenarios to simulate the total workload of a single server deployment. Calculating the VDI server requirements is a function of adding up the per-user resources needed and ensuring the server has sufficient hardware resources to cover the sum of needed resources, plus some additional resources to cover server core functions. HPE Small and Medium Business Solutions for Remote Workers uses a workload distribution of:

- 65% task user
- 25% knowledge user
- 10% power user

For example, if you had 100 users and you want to provide each user with persistent sessions, the total requirements could be calculated as:

Users	vCPUs	Memory (GB)	IOPS	Storage (TB)
65 task users	130	260	975	1.95
25 knowledge users	75	150	750	1.5
10 power users	40	80	450	0.9
Total user requirements	245	490	2100	3.35

Sizing considerations

- **vCPU:** The vCPU to physical CPU cores (pCores) ratio is subjective and greatly influences the capacity and cost of the solution. A 6:1 ratio of vCPUs to pCores is generally considered a conservative value for Windows 10 sessions running in VMs. In the "100 user" example above, 245 vCPUs would require about 41 pCores. Best practice is to also reserve 2–4 pCores for the host server. CPUs of 40+ cores would likely be considered expensive by most SMB standards. A single server configuration of this size would likely be provisioned with two 22-core CPUs, which also allows for more economical memory configurations.
- **Memory:** The total memory required for all users in the above example is 490 GB. Best practice is to also reserve at least 4 GB memory for the host—more is better. The memory provisioned for any VDI solution is a major source of expense and should be carefully considered. There are two key factors to consider when sizing memory:
  - First is understanding the performance relationship of the number of memory DIMMs the CPU will support. Intel 2nd generation Xeon Scalable processors have a 6-channel memory architecture. Intel 3rd generation Xeon Scalable processors and AMD EPYC processors have an 8-channel architecture. Most HPE ProLiant Gen10 DL100 and DL300 series servers support two DIMM slots per channel, for a total of 12 DIMMs per CPU for Intel 2nd generation or 16 DIMMs per CPU for Intel 3rd generation or AMD EPYC 3rd generation processors. A performance best practice is to ensure all channels are populated with identical memory DIMMs. For efficient memory capacity provisioning, DIMMs can be added in two different capacities as long as they are populated with identical DIMMs in slot A (White) and identical DIMMs of different capacity in slot B (Black). They must also be of the same rank, mixing of memory ranks is not supported. For example: 6 x 32 GB in White slots and 6 x 16 GB in Black slots can be provisioned to maximize the Memory/CPU ratio so that neither are over-provisioned. Mixing of UDIMM, RDIMM, and LRDIMM memory types is not supported. Finally, in two-processor configurations the memory installed per processor must be the same configuration for both processors. Refer to the appropriate HPE ProLiant Gen10, Gen10 Plus, or Gen10 Plus v2 server QuickSpecs for more information.

Table 2. Memory configuration best practices

Intel 2nd generation processors (6 DIMMs per channel slot A [White] and slot B [Black])					Intel 3rd generation and all AMD processors (8 DIMMs per channel slot A [White] and slot B [Black])				
Memory capacity	CPU 1		CPU 2		Memory capacity	CPU 1		CPU 2	
	White	Black	White	Black		White	Black	White	Black
96	16 GB				128	16 GB			
144	16 GB	8 GB			192	16 GB	8 GB		
192	16 GB	16 GB			256	16 GB	16 GB		
192	32 GB				256	16 GB		16 GB	
192	16 GB		16 GB		384	32 GB	16 GB		
288	32 GB	16 GB			384	16 GB	8 GB	16 GB	8 GB
288	16 GB	8 GB	16 GB	8 GB	512	32 GB	32 GB		
384	32 GB	32 GB			512	32 GB		32 GB	
384	32 GB		32 GB		512	16 GB	16 GB	16 GB	16 GB
384	16 GB	16 GB	16 GB	16 GB	768	32 GB	16 GB	32 GB	16 GB
576	32 GB	16 GB	32 GB	16 GB	1024	32 GB	32 GB	32 GB	32 GB
768	32 GB	32 GB	32 GB	32 GB					

Note: HPE ProLiant Gen10 and Gen10 Plus servers are capable of many other memory configurations besides the ones shown here. The memory configurations shown here are the most applicable to the VDI configuration discussed in this configuration guide.

In the case of the "100 user" sizing example discussed previously, at 490 GB the solution already requires multiple Intel 2nd generation Silver CPUs since this memory requirement exceeds the maximum per CPU capacity of 384 GB (i.e., 12 x 32 GB). You could use higher capacity 64 GB or 128 GB DIMMs with a single 40+ core CPU, but all of these parts would likely be much more expensive than two 20+ core CPUs and dividing the required memory between them.

The most efficient CPU/memory combination to meet the example requirements is two 20+ core AMD CPUs with 16 x 16 GB DIMMs per CPU (512 GB Total), or two Intel 20+ core CPUs with 6 x 32 GB plus 6 x 16 GB DIMMs per CPU (576 GB). These configurations maintain the memory best practices, but the Intel configuration slightly over-provisions the memory for this example and thus adds cost. This additional cost could be compensated for if planning for future workload increases.

- **Disk IOPS:** The performance of the storage subsystem is crucial to the success of a VDI deployment. Remote workers demand a physical desktop-like experience. Poor disk performance will quickly become a point of major dissatisfaction if not provisioned correctly. On a per-user basis, IOPS requirements seem relatively low, between 15 and 60 IOPS for the majority of workloads. But when you add up the concurrent disk activity of all the users, the IOPS requirement jumps dramatically.
  - **HDDs:** Standard SATA HDDs running at 7.2K RPM are capable of about 100 IOPS, so you can see that just a few users can easily saturate a SATA hard disk drive's (HDD's) IOPS capacity. SAS HDDs running at 10K RPM are only about 50% better, giving about 150 IOPS. Adding multiple drives in a RAID array increases the IOPS available, but even with 20 SAS HDDs at 10K RPMs in a RAID 5 array, you are still looking at only about 1100 IOPS, which is approximately enough to support only about 30 knowledge user profiles.
  - **SSDs:** Solid-state drives (SSDs)—on the other hand—are capable of many times the IOPS of HDDs. Starting at around 10,000 IOPS per disk, a pair of SSDs easily support 100–200 users if they had enough capacity. But this is where the trade-off begins. Higher capacity SSDs are generally more expensive than equivalent size SAS HDDs in terms of dollars per GB. Even still, the higher cost of individual SSD drives is likely to be less than the cost of the total number of HDDs required to achieve equivalent IOPS of SSDs. In the past, large SAS HDD arrays were the norm for many VDI deployments, but now that SSD prices have begun to be competitive with SAS HDDs, they are the storage medium of choice for many VDI solutions.

    SATA SSDs are suitable in most SMB sized VDI scenarios and are featured in the majority of Remote Worker Solutions, however if high performance or high user density is required SAS SSDs will provide greater performance for only a nominal uplift in drive cost between SAS and SATA SSDs. SAS SSDs are featured in the new performance configurations for Remote Worker Solutions.

    Referring back to the 100 VDI users example above, the IOPS requirement is 2100 IOPS, which can easily be provided by two SSDs. But for the required usable capacity needs of 3.35 TB and having the storage protected by RAID, it is probably more economical to configure that storage in one or two arrays of four smaller SSDs rather than one array of two large SSDs.
- **Disk capacity:** Like memory, planning for disk capacity for a persistent-session VDI solution is a simple matter of estimating the per-user capacity requirement and multiplying that by the number of users. However, this is also the one area where non-persistent sessions require less system resources. Since the non-persistent sessions "share" the storage, capacity requirements can be reduced by as much as 80%. Another factor to consider is whether or not the user data must be stored on the VDI host, or if the user data will be stored on a separate file share host. If user data is not stored on the VDI host then you only need to provision enough storage to meet the minimum operating system requirements. HPE Small Business Solutions for Remote Workers assume the user data will be stored on the VDI host which utilize two sets of SSDs. One set of small read-intensive SATA SSDs are configured in RAID 1 and designated as the VDI host boot volume for the host machine. The remaining set of SSDs are configured in a RAID 1 or RAID 5 and are designated as the storage volume for user's VMs, including user data. The "100 users" example above calls for a total capacity of 3.35 TB of usable storage. This could be satisfied by a pair of mixed-use 3.84 TB SSDs, but high-capacity SSDs are expensive. In many cases it is more economical to select a smaller size SSD and configure multiple RAID 1 arrays. A RAID 5 array with many smaller SSDs is also possible but be aware that the RAID Array Write Penalty for RAID 5 is double that for RAID 1, so performance will be lower for RAID 5. In the example above the requirement was for 3.35 TB, a good configuration might be to have two RAID 1 arrays using 1.92 TB SSDs and divide the users up between the two volumes.

  Another boot volume alternative is the new HPE NS204i-p Boot Device, available as a stand-alone PCIe card, or embedded into certain HPE ProLiant rack-server riser options which avoids consuming a PCIe slot. This boot device consists of a hardware RAID controller and two M.2 SSD drives for RAID protected storage of the boot volume. This device is ideal for operating systems like VMware Horizon that require hardware based disk controllers, or when it is required to have the boot volume on a hardware controller which is separate from the storage volumes, such as the case for hyperconverged infrastructure virtualization solutions like VMware vSAN™ or Microsoft Storage Spaces Direct. The riser version does not include the M.2 SSDs so be sure to add them if choosing a riser with the NS204i-p Boot Device.
- **Multiserver solutions:** In some cases, it is prudent to evaluate whether a single server solution will really cost less than multiple servers. A single server solution for a large number of users will require larger, more expensive processor, memory, and storage resources. Many times, the same or better configuration can be had by splitting the users up into groups and configuring a server for each group. This allows better resource management. Heavy users could be given more resources on a separate system without negatively impacting light and medium users. And more light and medium users can be supported on less expensive configurations than heavy users.

Note

HPE Small Business Solutions for Remote Workers—VDI can be operated as standalone solutions that serve a combination of session types and user profiles on a single server, or they can be deployed in a distributed fashion by grouping session type and user profiles workloads in a manner that distributes them among multiple servers with each server targeted for a specific user profile workload. Additionally, these solutions can be combined in a resilient multinode cluster configuration.

HPE Small Business Solutions for Remote Workers—VDI technical specifications

Table 3. Small Office Deployment VDI Solution Elements

Platform	HPE ProLiant ML30 Gen10 Plus Small Office Deployment (Medium)	HPE ProLiant DL20 Gen10 Plus Small Office Deployment (Large)
Solution capacity	Ideal for up to 10 task profile users	Ideal for up to 20 task profile users
Form factor	4U Tower Server 4 x LFF Hot-Plug bays	1U Rack Server 4 x SFF Hot-Plug bays
Processor	Intel Xeon E-Series (4-core/2.8 GHz)	Intel Xeon E-Series (6-core/3.4 GHz)
Memory	2 x 16 GB	2 x 16 GB
OS storage	OS on DATA Volume	2 x 300 GB HDD
Data storage	4 x 1 TB HDD	2 x 2.4 TB HDD
Disk controller	Intel VROC	HPE MR216i-a Gen10+
Network	2 x ports 1GbE	2 x ports 1GbE
Power supply	1 x 350W	2 x 500W
OS software	Microsoft Windows Server 2022 Standard Microsoft Windows Server 2022 RDS CALs	Microsoft Windows Server 2022 Standard Microsoft Windows Server 2022 RDS CALs
Optional software	HPE iLO Advanced	HPE iLO Advanced
Optional enhancements	HPE iLO Advanced (recommended)	

Table 4. Standard VMware Horizon VDI Solution Elements (Intel based)

Platform	HPE ProLiant ML350 Gen10	HPE ProLiant DL360 Gen10	HPE ProLiant DL360 Gen10	HPE ProLiant DL380 Gen10
Solution capacity	Ideal for 24–48 Blended profile users	Ideal for 18–38 Blended profile users	Ideal for 24–48 Blended profile users	Ideal for 38–76 Blended profile users
Form factor	4U Tower Server 8 x SFF Hot-Plug bays	1U Rack Server 8 x SFF Hot-Plug bays	1U Rack Server 8 x SFF Hot-Plug bays	2U Rack Server 8 x SFF Hot-Plug bays
Processor	Intel Xeon Scalable (10-core/2.4 GHz)	Intel Xeon Scalable (8-core/2.1 GHz)	Intel Xeon Scalable (10-core/2.4 GHz)	Intel Xeon Scalable (16-core/2.3 GHz)
Memory	6 x 16 GB + 6 x 8 GB	6 x 16 GB	6 x 16 GB + 6 x 8 GB	6 x 32 GB
OS storage	2 x 240 GB SSD	2 x 240 GB SSD	2 x 240 GB SSD	2 x 240 GB SSD
Data storage	3 x 960 GB SSD	2 x 960 GB SSD	3 x 960 GB SSD	3 x 960 GB SSD
Disk controller	HPE P408i-a Gen10	HPE P408i-a Gen10	HPE P408i-a Gen10	HPE P408i-a Gen10
Network	4 ports x 1GbE	4 ports x 1GbE	4 ports x 1GbE	4 ports x 1GbE
Power supply	2 x 800W	2 x 500W	2 x 500W	2 x 800W
OS software	VMware Horizon	VMware Horizon	VMware Horizon	VMware Horizon
Optional software	HPE iLO Advanced Veeam Backup and Replication	HPE iLO Advanced Veeam Backup and Replication	HPE iLO Advanced Veeam Backup and Replication	HPE iLO Advanced Veeam Backup and Replication
Optional enhancements	Scale-up Bundle (CPU, Memory, Disk) VMware vCenter®	Scale-up Bundle (CPU, Memory, Disk) VMware vCenter Scale-up Bundle (CPU, Memory, Disk) VMware vCenter	Scale-up Bundle (CPU, Memory, Disk) VMware vCenter	Scale-up Bundle (CPU, Memory, Disk) VMware vCenter

Table 5. Performance VMware Horizon VDI Solution Elements (AMD Based)

Platform	HPE ProLiant DL325 Gen10 Plus v2 (Small Config)	HPE ProLiant DL325 Gen10 Plus v2 (Medium Config)	HPE ProLiant DL365 Gen10 Plus (Small Config)	HPE ProLiant DL365 Gen10 Plus (Large Config)	HPE ProLiant DL365 Gen10 Plus v2
Solution capacity	Ideal for 39 Blended profile users	Ideal for 51 Blended profile users	Ideal for 39–75 Blended profile users	Ideal for 51–104 Blended profile users	Ideal for 75–149 Blended profile users
Form factor	1U Rack Server 8 x SFF Hot-Plug bays	1U Rack Server 8 x SFF Hot-Plug bays	1U Rack Server 8 x SFF Hot-Plug bays	1U Rack Server 8 x SFF Hot-Plug bays	2U Rack Server 8 x SFF Hot-Plug bays
Processor	AMD EPYC 7313P (16-core/3.0 GHz)	AMD EPYC 7443P (24-core/2.85 GHz)	AMD EPYC 7313 (16-core/3.0 GHz)	AMD EPYC 7513 (32-core/2.6 GHz)	AMD EPYC 7513 (32-core/2.6 GHz)
Memory	8 x 32 GB	8 x 32 GB	8 x 32 GB	16 x 32 GB	16 x 32 GB
OS storage	NS204i-p (2x 480 GB M.2 SSD)	NS204i-p (2x 480 GB M.2 SSD)	NS204i-p (2x 480 GB M.2 SSD)	NS204i-p (2x 480 GB M.2 SSD)	NS204i-p (2x 480 GB M.2 SSD)
Data storage	3 x 960 GB MU SAS SSD	4 x 960 GB MU SAS SSD	3 x 960 GB MU SAS SSD	5 x 960 GB MU SAS SSD	5 x 960 GB MU SAS SSD
Disk controller	HPE P408i-a Gen10	HPE P408i-a Gen10	HPE P408i-a Gen10	HPE P408i-a Gen10	HPE P408i-a Gen10
Network	4 x 1GbE OCP 1GbE HPE iLO Embedded	2 x 10GbE OCP 1GbE HPE iLO Embedded	4 x 1GbE OCP 1GbE HPE iLO Embedded	2 x 10GbE OCP 1GbE HPE iLO Embedded	2 x 10GbE OCP 1GbE HPE iLO Embedded
Power supply	2 x 500W	2 x 800W	2 x 800W	2 x 800W	2 x 800W
OS software	VMware Horizon	VMware Horizon	VMware Horizon	VMware Horizon	VMware Horizon
Optional software	HPE iLO Advanced Veeam Backup and Replication	HPE iLO Advanced Veeam Backup and Replication	HPE iLO Advanced Veeam Backup and Replication	HPE iLO Advanced Veeam Backup and Replication	HPE iLO Advanced Veeam Backup and Replication
Optional solution elements	VMware vCenter	VMware vCenter	Scale-up Bundle (CPU, Memory, Disk) VMware vCenter	Scale-up Bundle (CPU, Memory, Disk) VMware vCenter	Scale-up Bundle (CPU, Memory, Disk) VMware vCenter

Step 4: Add recommended options

HPE Small Business Solutions consist of a base system plus offer elements. These combinations are the foundation for special pricing and are the starting point for building your solution configuration.

HPE Small Business Solutions for Remote Workers—VDI are offered in a variety of configurations to meet the needs of SMBs of several sizes and IT environments. They are designed for cost-effectiveness and structured as building blocks for easy expandability. After selecting the appropriate Small Business Solution configuration for your business outcome and sizing requirements, you may also wish to expand its capabilities by adding recommended options.

Accelerator considerations

While GPU accelerators are commonly associated with VDI, they are not required, and in most cases are reserved for configurations supporting multimedia/engineering (very heavy) user profiles. GPUs require special attention to ensure proper heat dissipation and resource management. Additionally, the cost of the GPU and associated licensing for VDI is a significant expense that should be factored when determining the value of adding a GPU to the configuration. When remote sessions are fairly static—such as reading emails, editing text documents, and performing data entry or analysis—modern HPE ProLiant Gen10 servers are quite capable of supporting these workloads without a GPU. GPUs offer the greatest benefit when the remote workload shifts to more dynamic graphic rendering such as video editing, CAD/CAM, and geographic sciences.

Disaster recovery options

HPE RDX Removable Disk Backup System is a recommended option for reliable disk-based backup and recovery with unmatched portability, fast recovery, and easy integration.[1] The HPE RDX Removable Disk Solution provides a simple, cost-effective way to backup and protect critical data. Complement your local backups with a cloud backup strategy so you can recover quickly, even if you lose your entire site or local backup copies.

HPE StoreEver MSL 1/8 Tape Autoloader or MSL2024 Tape Library are recommended options that meet demanding storage requirements for businesses needing unattended backup, disaster recovery, or low-cost long-term archive capability.[2] Both systems offer a broad choice of storage capacities and technology including LTO-8, LTO-7, LTO-6, or LTO-5 Ultrium tape drives. Web-based remote management enables easy management from across the room or across the globe. Quickly manage tape media both in and out of the library with the standard bar code reader, configurable mail slots, and multiple removable magazines. Protect important business data from unauthorized access with several data encryption options. Quickly increase capacity and/or performance with tool-free drive upgrades in the MSL2024/MSL4048 or move tape drive kits to an MSL3040/MSL6480 for scalability and additional enterprise class features.

Other considerations

All of the HPE Small and Medium Business Solutions for Remote Workers can be expanded with a second CPU, more memory and storage, to effectively double the capacity of the solution. Finally, HPE Small Business Solutions are equipped, or can be equipped, with redundant power supplies for additional availability protection.

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 allows 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. With HPE Technology Refresh, SMBs can have the IT they need to meet business goals and pay over time to conserve cash, saving 10% to 15% over three or four years.

[1] HPE RDX is recommended on solution configurations built on HPE ProLiant MicroServer Gen10 Plus, ML30 Gen10, ML110 Gen10, ML350 Gen10, and DL20 Gen10 servers with Windows Server. RDX is not supported in ClearOS.

[2] HPE StoreEver MSL 1/8 Tape Autoloader or MSL2024 Tape Library are recommended on solution configurations built on HPE ProLiant DL100 and DL300 series Gen10 servers.

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 Remote Workers solution brief
- HPE ProLiant Server QuickSpecs
- HPE ProLiant Server Options
- IT Support Services
- Get connected
- iQuote

Learn more at

hpe.com/info/smbsolutions

Our solution partners

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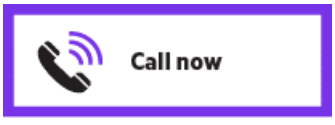
AMD

Make the right purchase decision. Contact our presales specialists.



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