Technical White Paper

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Whether it is an IT technician servicing a single rack, or a team of professionals managing multiple data centers–with HP Rack Mounting Solutions, everyday tasks are made easy. HP Rack Mounting kits are engineered with the samecustomer-centric design philosophies that have made the HP Z Workstation product line a continuing success.

To maximize rack density, HP engineers have designed a low-profile slide-rail solution for the HP Z2 Mini G9 and a fixed-rail solution that can be customized on-the-spot to fit the HP Z2 Mini G5, HP Z2 Tower G5, HP Z2 Tower G8, HP Z2 Tower G9, HP Z4 G4, HP Z4 G5, HP Z6 G4, or HP Z6 G5 Workstations. The system-tray features captive fasteners, allowing for quick and easy tool-free access to the Workstation.

For the HP Z8 G4/G5, HP Z8 Fury G5, and HP ZCentral 4R Workstation, HP continues to offer an enterprise-class rail solution that fully extends– allowing for in-rack configuration of the Workstation. Gaining access to the interior components of a rack mounted HP Z8 G4/G5 or HP Z8 Fury G5 is a tool-free operation.

A COMPLETE REMOTE SOLUTION

Racked Z by HP Workstations, when combined with HP Anyware remote access software and the HP Anyware Remote System Controller, give a complete and comprehensive centralized computing solution that is an excellent alternative to virtualization. End-users can be equipped with HP Thin Clients or other client devices and use HP Anyware software to access the remote workstations while IT admins can use the HP Anyware Remote System Controller to manage those same workstations. With a centralized Workstation solution from HP you have faster access to centralized storage, increased security, the ability to remotely manage small offices and distributed teams, and the confidence of 24/7 operation[1] that HP Z Workstations are known for.

With the variety of HP Workstations that can be racked--from the entry HP Z2 Mini to the ultra-high end HP Z8 you can choose the performance that matches your unique needs. And with HP Anyware* remote access software, which provides a high-performance remote user experience, and the HP Anyware Remote System Controller, which enables fleet management from a single pane of glass, a robust centralized solution is easy and inexpensive to implement.

* Network access required. HP Anyware software and licensing are available through a 1- or 3-year subscription. Renewal is required after the subscription term. HP Anyware subscriptions are based on the number of concurrent PCoIP connections used (pay for the number of host connections, not the software) with a minimum order quantity of 5. For a limited time, an HP Anyware Professional subscription also includes access and support for ZCentral Remote Boost and ZCentral Connect and is available for purchase through an HP reseller or contact sales at hp.com/Anyware. ZCentral Remote Boost Sender requires Windows 10 and 11, RHEL/CentOS (7 or 8), or UBUNTU 18.04 or 20.04 LTS operating systems. macOS (10.14 or newer) operating system and ThinPro 7.2 are only supported on the receiver side. ZCentral Connect requires Windows (10 or 11) or Windows Server (2016 or 2019) operating system, Microsoft Active Directory and Intel Active Management Technology for select features. For system requirements and to install HP Anyware and Anyware Manager, refer to the Admin Guides at: https://docs.teradici.com/find/product/hp-anyware.



Figure 1. HP Z2 Mini G4 Racked



Figure 2. HP Z8 Racked

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RACK MOUNTING FOR THE HP Z2 MINI G3/G4/G5/G9 WORKSTATIONS

The solution for racking the HP Z2 Mini G3/G4/G5 uses the HP Z2/Z4/Z6 Depth Adjustable Rail Rack Kit (2A8Y5AA) along with the HP Z2 Mini Rack Tray Support Kit (1A4W4AA). Each HP Z2 Mini requires the HP Z2 Mini Chassis and ePSU Rack Mount Bracket kit (3RW67AA). The (3RW67AA) mounting bracket kit includes 1 bracket for the HP Z2 Mini chassis and 1 bracket for the HP Z2 Mini external power supply.

The HP Z2/Z4/Z6 Depth Adjustable Fixed Rail Rack Kit includes a set of fixed-rail support brackets that attach directly to the rack and provide a secure mounting platform for the system-tray and Workstation. The fixed-rails are adjustable and can accommodate racks that are 24-30 inches deep. The HP Z2 Mini is installed in the vertical position and 7 Minis can fit in the 5U space.



Figure 3. The HP Z2 Mini installed in the HP Z2/Z4/Z6 Depth Adjustable Fixed Rail Rack Kit using the HP Z2 Mini Rack Tray Support Kit (1A4W4AA – Qty1) and the HP Mini Chassis and ePSU Rack Mount Brackets (3RW67AA – Qty 7)

Rack Mounting HP Z2 Mini G3/G4/G5			
HP Z2 Mini (Qty)	Rail Rack Kit (2A8Y5AA)	Support Kit (1A4W4AA)	Mount Bkt Kit (3RW67AA)
1 to 7	Qty 1	Qty 1	Qty 1 to 7

The solution for racking the HP Z2 Mini G9 is new, improved and easier to implement. It uses the HP Z2 Mini G9 Rail Rack Kit (6C1U0AA), which comes fully assembled with all necessary hardware to enable quick install of up to 6 HP Z2 Mini G9s. An optional Cable Management Arm (35Z34AA) easily attaches to the rack kit and provides cable routing for all systems and ePSUs.

The HP Z2 Mini G9 Rail Rack Kit includes a rack mount tray fixed with 6 mounting brackets for the external power supply and 6 mounting brackets for the Z2 Mini chassis, and a set of slide-rails. The slide-rails provide 26 inches of travel, allowing the unit to slide completely out of the rack for servicing and installation. The outer rail members have tool-less front and rear mounting brackets for rack posts having 9.5 mm square, 7.1 mm round, or #10-32 mounting holes. The outer rail members are adjustable, aiding in mounting to racks 24 to 36 inches deep. The inner rail members must first be secured to the sides of the rack mount tray. Once the inner rails are secured, they can be inserted (stab-in) into the outer members installed in the rack. The inner sliding rails also support an optional Cable Management Arm (35Z34AA) to enable the system to extend out of the rack without disconnecting rear data and power cables. Depending on the rack depth the inner rails may extend beyond the rear bracket, particularly if the Cable Management Arm is attached.

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The HP Z2 Mini G9 is installed in the vertical position and 6 Minis can fit in the 5U space.



Figure 3. HP Z2 Mini G9 Rack Rail Kit

Rack Mounting HP Z2 Mini G9	
HP Z2 Mini (QTY)	Rail Rack Kit
1 to 6	6C1U0AA
	*Spare part number for rack kit [N21665-001]

RACK MOUNTING FOR THE HP Z2 TOWER G4/G5/G8/G9, HP Z4 G4/G5 AND HP Z6 G4/G5 WORKSTATIONS

The HP Z2/Z4/Z6 Depth Adjustable Fixed Rail Rack Kit (2A8Y5AA) includes a set of fixed-rail support brackets that attach directly to the rack and provide a secure mounting platform for the system-tray and Workstation. The fixed-rails are adjustable and can accommodate racks that are 24–30 inches deep. The system-tray is engineered to provide tool-free access to the Workstation, allowing the Workstation to be serviced without removing it from the rack.

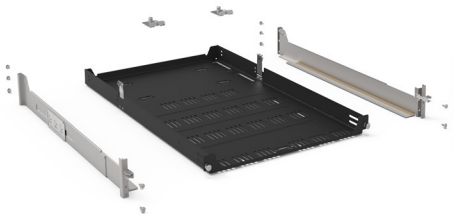

Figure 4. The HP Z2/Z4/Z6 Depth Adjustable Fixed Rail Rack Kit (2A8Y5AA) exploded view



Figure 5. The HP Z4 G4 installed in the HP Z2/Z4/Z6 Depth Adjustable Fixed Rail Rack Kit

RACK MOUNTING FOR THE HP ZCENTRAL 4R WORKSTATIONS

Available as configured to order or after market, the HP ZCentral 4R rack rails (16G60AA) provide 26 inches of travel, allowing the unit to slide completely out of the rack for servicing and installation. The outer rail members have tool-less front and rear mounting brackets for rack posts having 9.5 mm square, 7.1 mm round, or #10-32 mounting holes.

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The outer rail members are adjustable, aiding in mounting to racks 24 to 36 inches deep. The inner rail members must first be secured to the sides of the chassis. Once the inner rails are secured, they can be inserted (stab-in) into the outer members installed in the rack. The inner sliding rails also support an optional Cable Management Arm (35Z34AA) to enable the system to extend out of the rack without disconnecting rear data and power cables. Depending on the rack depth the inner rails may extend beyond the rear bracket, particularly if the Cable Management Arm is attached.

The HP ZCentral 4R Workstation also has a front and rear power button to provide easy access while racked.





Figure 6. Rack kit Assembly (16G60AA)

RACK MOUNTING FOR THE HP Z8 G4/G5 AND HP Z8 FURY G5 WORKSTATIONS

The HP Z640/Z840/Z8 Rail Rack Kit (2FZ77AA) features enterprise-class, three-section ball-bearing extension rails. These rails are fully extendable, allowing the unit to slide completely out of the rack for servicing. Whether it is adding memory, swapping hard disk drives or installing an option card, upgrading a rack mounted Workstation is a snap.

The HP Z640/Z840/Z8 Rail Rack Kit rails install into racks without using tools, making setup convenient and efficient. The inner slide and mounting flanges attach to the computer chassis using a set of screws for added strength and stability. The top mounting holes are concealed underneath the top plastic trim, which must be removed to attach the inner slide and mounting flanges.

Some of our customers need to mount their Workstations into racks that are only 24 inches deep (such as those commonly used in the Broadcast industry), instead of 29-30 inch deep racks, so adjustability is an important objective. The HP Z640/Z840/Z8 Rail Rack Kit is adjustable to accommodate racks 24–30 inches deep. For convenience, the adjustable rails are shipped configured to fit standard racks.



Figure 7. A Rack Mounted HP Z8 G4 installed with an HP Z640/Z840/Z8 Rail Rack Kit (2FZ77AA) showing access to interior Workstation components

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For customers looking to upgrade the HP Adjustable Rail Rack Flush Mount Kit (B8S55AA), HP is offering the HP Z8 Rack Rail Upgrade Kit (2FZ76AA). The kit includes a set of inner slide rails, front flanges, and hardware necessary to perform a seamless upgrade to the new, more powerful, HP Z8 G4/G5/Fury G5–all without removing

rack kit hardware from the rack. Simply attach the HP Z8 Rack Rail Upgrade Kit to the HP Z8 G4/G5/Fury G5, remove the HP Z840 from the rack, and replace with the configured HP Z8 G4/G5/Fury G5.

The HP Z8 workstations also have a front and rear power button to provide easy access while racked.

HOW HP RACK KITS FIT "U"



Figure 8.
The HP Z8 Rack Rail Upgrade Kit (2FZ76AA) components



Figure 9.
The HP Z640/Z840/Z8 Rail Rack Kit (2FZ77AA) components

Broadcast and IT racks are typically measured in units of "U"where each "U" is equal to 1.75" (44.45 mm). HP rack kits are designed to optimize the distribution of Workstations in a server rack–providing each unit with sufficient airflow to maintain ideal operating temperatures and adequate clearances to gain access to the Workstation. Refer to the table below to determine which rack kit is compatible with your Workstation, and how much space is required.

CURRENT GENERATION HP DESKTOP WORKSTATIONS

HP Product Number	Description	Rack Type Supported[1,2]	HP Z2 Mini G5	HP Z2 Tower G5	HP ZCentral 4R	HP Z4/Z6 G5	HP Z8 G5/Fury G5	HP Z2 Mini G9	HP Z2 Tower G8/G9
2A8Y5AA	HP Z2/Z4/Z6 Depth Adjustable Fixed Rail Rack Kit	IT Rack, Broadcast Rack	5U*	4U		4U			4U
1A4W4AA	Support Kit		5U*						
3RW67AA	HP Z2 Mini Chassis and ePSU Rack Mount Brackets	IT Rack, Broadcast Rack	5U*						
2FZ77AA	HP Z640/Z840/Z8 Rail Rack Kit	IT Rack, Broadcast Rack[3]					5U		
2FZ76AA	HP Z8 Rack Rail Upgrade Kit	IT Rack, Broadcast Rack[3]					5U		
16G60AA	HP ZCentral Rack Rails	IT Rack, Broadcast Rack[3]			1U				
35Z34AA	HP Cable Management Arm	IT Rack, Broadcast Rack[3]			1U			5U	
6C1UDAA	HP Z2 Mini G9 Rail Rack Kit	IT Rack, Broadcast Rack						5U	

*Required to rack HP Z2 Mini G5

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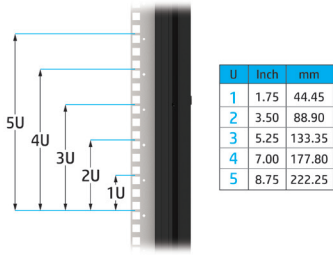
PREVIOUS GENERATION HP DESKTOP WORKSTATIONS

HP Product Number	Description	Rack Type Supported[1,2]	HP Z2 Mini G3/G4	HP Z2 Tower G4	HP Z440	HP Z640	HP Z840	HP Z4/ Z6 G4	HP Z8 G4
2A8Y5AA	HP Z2/Z4/Z6 Depth Adjustable Fixed Rail Rack Kit	IT Rack, Broadcast Rack	5U*	4U				4U	
1A4W4AA	Support Kit		5U*						
3RW67AA	HP Z2 Mini Chassis and ePSU Rack Mount Brackets	IT Rack, Broadcast Rack	5U*						
2FZ77AA	HP Z640/Z840/Z8 Rail Rack Kit	IT Rack,Broadcast Rack[3]					5U		5U
2FZ76AA	HP Z8 Rack Rail Upgrade Kit	IT Rack, Broadcast Rack[3]							5U
WH340AA	HP Z2/Z4 Depth Adjustable Fixed Rail Rack Kit	Broadcast Rack		4U	4U				

*Required to rack HP Z2 Mini G3/G4



U	Inch	mm
1	1.75	44.45
2	3.50	88.90
3	5.25	133.35
4	7.00	177.80
5	8.75	222.25

Figure 10. Layout and dimensions of a 5U rack space

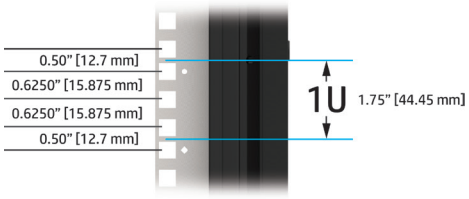


Figure 11. Rack mounting hole positioning in 1U rack space

ENVIRONMENTALLY FRIENDLY

HP is committed to environmental sustainability. The HP Workstation design team has taken a proactive approach (beyond just industry regulations) to recyclability and selecting materials that reduce the risk to the environment and health.

CONCLUSION

As a technology leader, HP continues to lead the way in innovative design solutions for Rack Mounting. HP Rack Mounting kits are engineered to improve the end user experience. HP is using its extensive experience in customer-centric designs to develop environmentally friendly, highly accessible Rack Mounting Solutions for today and new innovations for tomorrow's more powerful systems.

Resources, contacts, or additional links

Visit HP's White Paper site to learn more about the innovation in HP Workstations and the latest technologies offered in the products.

[1] Broadcast racks have a depth of 24" between the rails and the mounting holes are typically tapped for #10-32 threads.
[2] IT Racks typically have 30" depth between the front and rear rails, and either round or square untapped holes with clip-on nuts.
[3] Parts for installing the sliding rack mount kit in HP legacy racks are sold separately in adapter kit part number WD587AA and are compatible with the following rack models: E3660B, E3661B, E3662B, E7590A, J1450B or J1487A/B, regarding parts for legacy racks to match current gen note for kit 2FX77AA.



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