



## TECHNICAL WHITE PAPER

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# RACK MOUNTING AND THE HP WORKSTATION

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 same customer-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 fixed-rail solution that can be customized on-the-spot to fit the HP Z2 Mini G5, HP Z2 Tower G5, HP Z4 G4 or HP Z6 G4 Workstations. The system-tray features captive fasteners, allowing for quick and easy tool-free access to the Workstation.

For the HP Z8 G4 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 Workstation is a tool-free operation.

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Figure 1. HP Z2 Mini G4 Racked



Figure 2. HP Z8 Racked

# A COMPLETE REMOTE SOLUTION

Racked HP Workstations, when combined with HP ZCentral Remote Boost, HP's industry-leading remote desktop software, and HP Thin Clients provide a complete remote centralized computing solution that is an excellent alternative to virtualization. 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<sup>1</sup> 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 RGS, which provides a high performance remote user experience and which is included at no additional cost, a robust centralized solution is easy and inexpensive to implement.

# RACK MOUNTING FOR THE HP Z2 MINI G3/G4/G5 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 |                         |                       |                         |
|--------------------------|-------------------------|-----------------------|-------------------------|
| 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              |

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# RACK MOUNTING FOR THE HP Z2 TOWER G4 AND G5, HP Z4 G4 AND HP Z6 G4 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

The HP ZCentral 4R rack rails (16G60AA) provides 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 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.



Figure 6. Rack kit Assembly (16G60AA)



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# RACK MOUNTING FOR THE HP Z8 G4 WORKSTATIONS

The HP Z640/Z840/Z8 G4 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 G4 Rail Rack Kit rails installs 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.



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

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 the 29-30 inch deep racks that are commonly used in the industry, so adjustability is an important objective. The HP Z640/Z840/Z8 G4 Rail Rack Kit is adjustable to accommodate racks 24-30 inches deep. For convenience, the adjustable rails are shipped configured to fit standard racks.

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—all without removing rack kit hardware from the rack. Simply attach the HP Z8 Rack Rail Upgrade Kit to the HP Z8 G4, remove the HP Z840 from the rack, and replace with the configured HP Z8 G4.



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



Figure 9. The HP Z640/Z840/Z8 G4 Rail Rack Kit (2FZ77AA) components

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# HOW HP RACK KITS FIT "U"

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 <sup>1,2</sup>   | HP Z2 Mini G5 | HP Z2 Tower G5 | HP ZCentral 4R | HP Z4/6 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 G4 Rail Rack Kit                 | IT Rack, Broadcast Rack <sup>3</sup> |               |                |                |            | 5U       |
| 2FZ76AA           | HP Z8 Rack Rail Upgrade Kit                      | IT Rack, Broadcast Rack <sup>3</sup> |               |                |                |            | 5U       |
| 16G60AA           | HP ZCentral Rack Rails                           | IT Rack, Broadcast Rack <sup>3</sup> |               |                | 1U             |            |          |
| 35Z34AA           | HP Cable Management Arm                          | IT Rack, Broadcast Rack <sup>3</sup> |               |                | 1U             |            |          |

\*Required to rack Z2 Mini

## PREVIOUS GENERATION HP DESKTOP WORKSTATIONS

| HP Product Number | Description                                      | Rack Type Supported <sup>1,2</sup>   | HP Z2 Mini G3/G4 | HP Z2 Tower G4 | HP Z440 | HP Z640 | HP Z840 |
|-------------------|--------------------------------------------------|--------------------------------------|------------------|----------------|---------|---------|---------|
| 2A8Y5AA           | HP Z2/Z4/Z6 Depth Adjustable Fixed Rail Rack Kit | IT Rack, Broadcast Rack              | 5U*              | 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 G4 Rail Rack Kit                 | IT Rack, Broadcast Rack <sup>3</sup> |                  |                |         |         | 5U      |
| WH340AA           | HP Z2/Z4 Depth Adjustable Fixed Rail Rack Kit    | IT Rack, Broadcast Rack              |                  | 4U             | 4U      |         |         |

\*Required to rack Z2 Mini

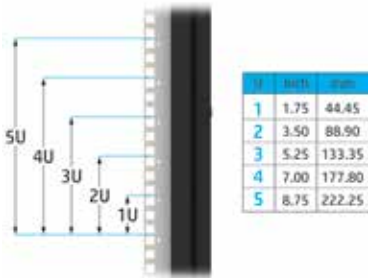


Figure 10. Layout and dimensions of a 5U rack space

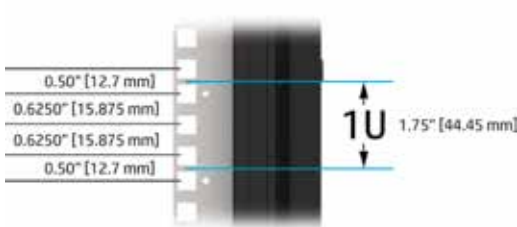


Figure 11. Rack mounting hole positioning in 1U rack space

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# 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.

### FOR MORE INFORMATION

[hp.com/go/zcentral](http://hp.com/go/zcentral)

HP's industry-leading remote desktop software – a key enabler for using a Workstation in a rack.

[hp.com/go/whitepapers](http://hp.com/go/whitepapers)

White papers with more depth on the capabilities and benefits of HP Z Workstations.

[hp.com/go/workstations](http://hp.com/go/workstations)

Information about HP Workstations.

<sup>1</sup> Broadcast racks have a depth of 24" between the rails and the mounting holes are typically tapped for #10-32 threads.

<sup>2</sup> IT Racks typically have 30" depth between the front and rear rails, and either round or square untapped holes with clip-on nuts.

<sup>3</sup> 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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