High-performance computing power from anywhere

Why HP ZCentral is the right solution for remote data scientists

Gain collaboration without compromise

With hybrid work a reality, you probably have employees working both on- and off-site. And while remote solutions like virtual desktop infrastructure (VDI) and cloud may have worked in the past, they throttle the productivity of your data scientists. Can you create an in-office technology experience specifically for these compute-intensive users? In this guide, you'll learn how the world's first single-sourced remote workstation solution[2] from HP can give you

up to 33% higher performance with dedicated remote computing for as little as 59% of the cost of virtualized workstations.[3]

Compared to cloud, HP remote solutions offer considerably lower TCO and quick, predictable response times. That's better performance, without compromises—for your data teams or for IT.

37%

of data scientists feel the technology they have makes work more difficult.[1]

Meet your data scientists' needs

Compute-intensive data scientists require high-end computing and low-latency connectivity because they're generating insights and making discoveries that drive your company's intellectual property. These workers are the ones who need to collaborate worldwide, analyze big data live in the field, and test models whenever inspiration strikes. Tethering these users to their office workstation inhibits the way they naturally operate.

Data scientists want remote access to collect unstructured data, clean it, model it, and quickly pull insights from it so managers can make on-the-fly decisions. They get frustrated with limited space in the site data closet and slow data-upload times. They need remote access to data at the edge source to clean it up and run real-time algorithms, without waiting for batch uploads to the cloud.

Additionally, these users, who regularly access massive amounts of sensitive data, prefer to think about the inventive, creative nature of their jobs—not the security of their endpoints. Entrusting terabytes or petabytes of personal information and intellectual property to a VPN or VDI connection isn't a risk worth taking. By providing data scientists with secure remote access at all times, IT can gain peace of mind and enable data teams to stay productive without worrying about their safety.

Why traditional remote models slow you down

VDI and cloud are the traditional approaches for remote work. But for performance-driven data scientists, these solutions can slow down the workflow. VDI restricts compute power, and cloud provisioning and performance can't always keep pace with the explosion of data-heavy workloads.

VDI

Workflows often rely on shared corporate storage, large datasets that the entire team works on, or data that needs to stay secure. That drives some companies to use a VDI or virtualized servers that access a virtualized pool of computing resources. But these methods don't provide undivided access to workstation-class performance and can introduce latency, complexity, and overhead costs.

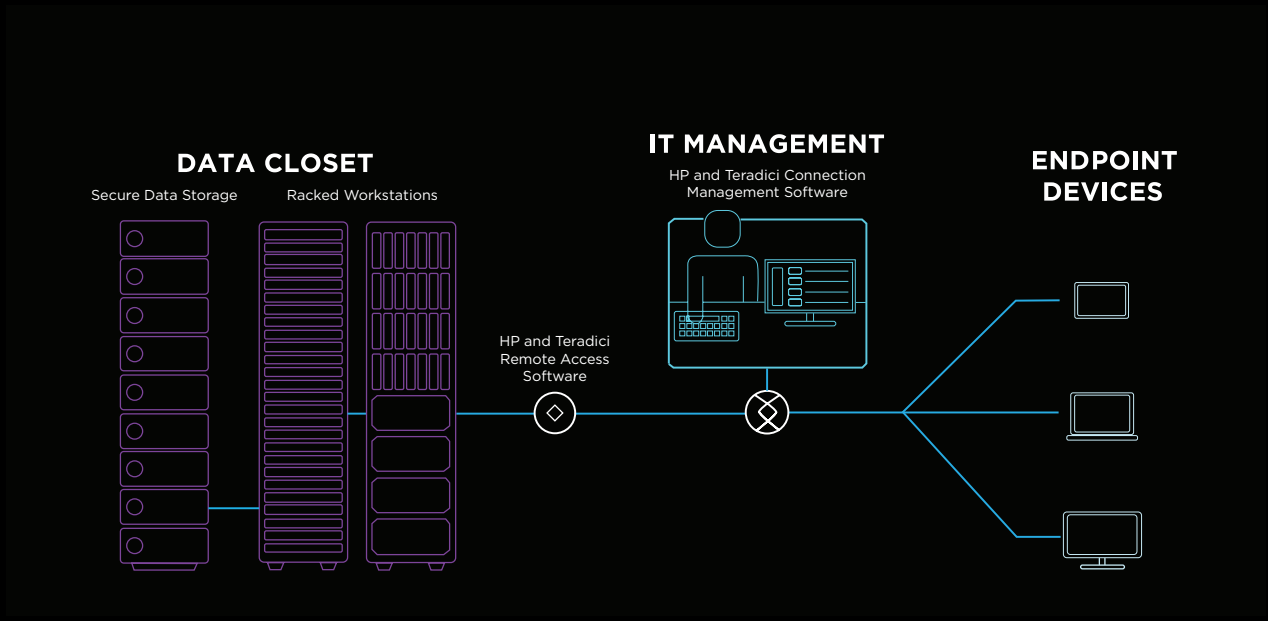
Cloud

Putting apps and storage in the cloud can be a viable solution for regular office workers, but it presents several challenges for data scientists. Provisioning more space isn't always an instant process. Overhead expenses grow rapidly with large amounts of data moving to and from the cloud. Location, configuration, and bandwidth constraints can cause unpredictable performance. Lastly, when data leaves your premises, security risks increase.

While traditional VDI, cloud, and remote desktop apps are the typical way for employees to "tunnel in" to the company network, the more users that are connected (as in, many people are working from home at a peak time), the more the performance can deteriorate. Unlike these other remote-access solutions, HP ZCentral is built specifically to support workstation-class GPU-intensive workloads over broadband, which has significantly lower bandwidth than local area connections.

Centralize and accelerate high-end data teams

The HP ZCentral solution moves past the traditional problems with VDI and cloud for industries that need to enable remote data scientists with fast, secure access to data and applications. This centralized stack combines hardware and software in a turnkey solution—empowering your global workforce with remote workstation access that rivals the experience of working locally. It also eases the IT burden with significant cost, security, and manageability advantages.



Click here to learn more

Boost performance—over any infrastructure

Even if you're already running other brands of PC hardware, VMs, or software, you can still get the smooth performance of HP and Teradici remote access by overlaying our software atop your existing infrastructure and remote-access applications—it's both vendor- and OS-agnostic. Turn any device—including tablets, laptops, and even smartphones—from any manufacturer into a high-performance PC through HP and Teradici remote access software.

Lay the foundation for no-compromise collaboration with HP and Teradici remote access software—high-performance PC access from anywhere and any device

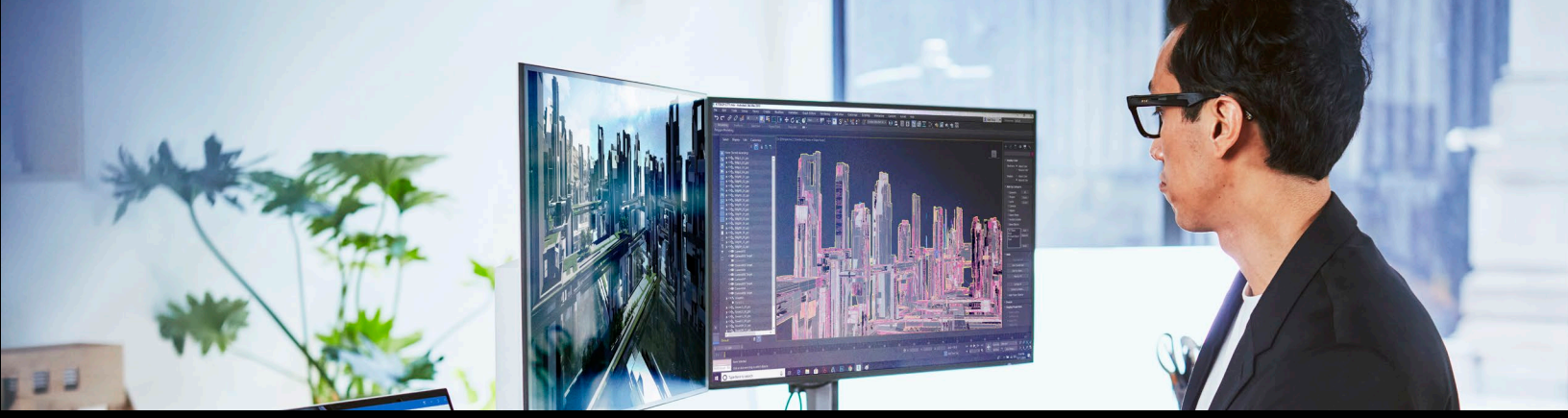
With OS-independent software that provides high-fidelity remote workstation connectivity, remote data scientists can access workstation power from their existing client device—as if they were in the office. Users can collaborate in near real time by sharing workstations one-to-many or many-to-one. In addition to a connection that's solely portioned for task-intensive users, advanced compression and dynamic resizing keep data professionals connected in virtual real time. HP and Teradici remote access software helps performance-hungry users work like they're local:

- 1:1 dedicated connection with full CPU and GPU power to handle intense workloads
- Collaboration tools built in for sharing and controlling remote sessions with other users
- Exceptional image quality with support for 4K or multiple-monitor setups, plus automatic adaptation to the receiver's resolution
- Application-independent—only pixels are sent, not data
- Screen sessions are scalable to any size
- Support for Windows 10 touch and gestures
- Support for specialized client hardware like a 3D-space mouse and financial-trading keyboard
- Support for Windows, Linux, and Mac OS across laptops, tablets, and even smartphones

Learn more at:
hp.com/ZCentralRemoteBoost
teradici.com

2020 Engineering Emmy® Award Winner

ZCentral Remote Boost and Teradici CAS has helped the media and entertainment industry transition to a new way of working. By providing remote access to advanced computing, editors, artists, and other creative professionals can now create and collaborate from anywhere.



Bring visibility and control with HP and Teradici remote management[7] software—workstation management made easy

Manage connections between remote data teams and your centralized hardware with HP and Teradici remote management software. Data scientists can easily connect to a dedicated workstation or the next available one within a pool of workstations—no technical or system knowledge needed. IT department managers gain remote control of all HP and Teradici remote access workstation connections:

- Monitor status with workstation health indicators
- Integrated with Microsoft Active Directory for easy user setup
- Hard power-on or power-off for total system control[8]
- Assign individual machines or share pools of available workstation resources
- Easily manage all user connections remotely from a single console
- One-click access for environments running Z workstations

Complete your solution with racked Z Workstations—secure computer power

Although you can run HP and Teradici remote access software[6] and remote management[8] software over your existing non-HP infrastructure, your data teams get the optimal experience if you're connecting to Z by HP Workstations (Z). Even if your user endpoints are not workstation-class PCs, Z lets them harness powerful performance for compute-intensive remote workflows, including graphics-dedicated CPU cores.

HP ZCentral 4R Workstations are 1U rack-mountable, so you can co-locate them next to your data storage for fast access to project files—no extra remote hardware or software required.[5] And as the most secure workstation,[9] Z by HP keeps data highly protected and within the workstation. It's a simple end-to-end solution for data scientists and the IT teams that support them.

Clearer collaboration over cloud

Even organizations that are dedicated to VDI or cloud-based workstations find that layering HP and Teradici remote access software on top of their existing solutions can dramatically improve performance and end-user experience, as well as make life easier for IT.

- **Predictable cost:** Considerably lower TCO compared to cloud workstations, which are better-suited for flex use than long-term use.
- **Protected location:** Critical data stays inside the company for maximized security.
- **Licensing-compliant:** Standard ISV licensing and support vs. VDI and cloud.

Outperform VDI

HP ZCentral solutions provide workload and workflow-specific dedicated compute power, plus faster project load times compared to virtualization.[3] A centralized computing infrastructure with HP and Teradici remote access software and racked Z workstations can deliver up to:

16–33%
higher performance[3]

59–72%
of the cost of server-based virtualization[3]

Servers are traditionally more expensive than workstations and typically carry additional hardware and software costs.

Equip power users to tackle complex projects from anywhere

HP ZCentral is the world's first single-sourced remote workstation solution,[2] a hardware and software solution that delivers unthrottled, workload-optimized compute power from anywhere, on any device.

And high-performance users aren't the only ones to benefit—IT will love lower costs and a secure, centralized location for workstation management.

Learn more at:
hp.com/go/zcentral

1. HP Proprietary survey of 350 data scientists, 25 years or older, in the US, Germany, and China – November, 2021.
2. Based on workstation OEMs that design, develop, and support both the hardware and software for centralized workstations to enable remote graphics as of October 2019.
3. Based on hp.com store and dell.com store pricing dated September 2019, and performance based on core count of a racked-mounted HP Z4 G4, 6 core workstation configuration with 3 year warranty support, compared with two configurations of Dell PowerEdge R740 Rack Server configured with VMware Horizon Advanced 10 pack CCu license and 3 year support, Quadro Virtual Data Center Workstation hardware and licenses, and 3 year support. One configuration of the server uses 36 cores to be shared among 9 concurrent users, the other uses 56 cores to be shared among the same 9 users to ensure that each of the 9 users avail of 6 cores simultaneously, to more closely approximate the maximum CPU core availability of 9 racked Z4 workstations. Note that the processors on the Dell servers have a lower base frequency in both cases.
4. No additional virtualization hardware or software required (i.e. VMWare, Citrix, GPU virtualization, Teradici, or 3rd-party brokers). Specialized IT management not required.
5. HP ZCentral Remote Boost Sender does not come preinstalled on Z Workstations but can be downloaded and run on all Z Workstations (desktops and laptops) without license purchase through December 31, 2022. License purchase is required to use ZCentral Remote Boost Sender on non-Z hardware. Starting December 15, 2021, a CA+ subscription (ZCentral Remote Boost and Teradici CAS) can be purchased at https://teradici.com/products/future-of-remote-compute. ZCentral Remote Boost Sender requires Windows 10 or 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. Requires network access. The software is available for download at hp.com/ZCentralRemoteBoost.
6. If you purchased a ZCentral Connect version 20 license, the purchased ZCentral Connect license will not expire. If you are using ZCentral Connect version 22- as part of the HP and Teradici single subscription (CA+ subscription) your license to use the software will expire with the term of the 1-year subscription. HP ZCentral Connect requires HP ZCentral Remote Boost Software which can be downloaded at hp.com/ZCentralRemoteBoost, a Windows (10 or 11) or Windows Server (2016 or 2019) operating system, Microsoft Active Directory and Intel Active Management Technology for select features.
7. Requires enablement of Intel Active Management Technology.
8. Based on HP's unique and comprehensive security capabilities at no additional cost among desktop workstation vendors as of January 2017 on HP Desktop Workstations with 7th Gen and higher Intel® Processors.
9. HP DaaS is sold separately. HP DaaS includes hardware, repair services, and analytics components and may include financing. HP DaaS requirements may vary by region or by Authorized HP DaaS Service Partner. Please contact your local HP Representative or Authorized DaaS Partner for specific details in your location. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

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