

5 Benefits of Providing Secure Remote Access to Network IT Infrastructure



A Vertiv Application Brief

Vertiv Provides Tightly Integrated and Secure Management Capabilities

Data center investment is soaring, as enterprises expand their infrastructures to support business growth. A 2021 survey found that 62 percent of organizations are deploying cloud technology to enable greater innovation and agility, while 55 percent are using edge computing to bring services closer to users.¹ IT and data center teams are also turning to partners to gain faster access to new capabilities and help servicing their growing network footprint. IT teams benefit greatly from purchasing infrastructure that can be preconfigured and is interoperable, meaning that solutions can be easily installed and managed.

Manage Your Entire Rack from Anywhere – Even During a Network Outage

One of the greatest needs that both enterprise and service providers have is for greater visibility into rack-supported systems and their performance. IT and data center teams typically use both IT management platforms and serial consoles to access, monitor, manage, and control networking and other equipment. While console servers have evolved over the past decade, some users may not be aware of the wide range of capabilities these solutions provide and how they provide extra value when combined with power distribution and protection solutions. Vertiv offers an integrated rack solution that includes Vertiv™ Avocent® ACS Serial Console, Vertiv™ Geist™ rPDUs, and Vertiv™ Liebert® UPSs, to help companies achieve the following goals:

- 1. Gaining visibility into power system performance:** High availability of systems is now table stakes, whether teams are managing their own or customer systems. That may mean ensuring 99.9 percent or even 99.999 percent uptime.

Being able to see and control both rack PDU performance and UPS battery conditions is critical to delivering that performance, ensuring business applications and other mission-critical workloads stay up and constantly available. Geist rPDU and Liebert UPS solutions are so tightly integrated into Avocent ACS that they appear as one continuous solution. That ensures that teams can easily see both power distribution and backup power supply conditions, receive alerts, and act on them. For companies that have been using UPS devices as standalone solutions, this integration will be a boon, providing a path for alerts that have previously gone nowhere.

In addition, many data center and IT teams have adopted UPS solutions with lithium-ion batteries for their greater environmental resilience, longer lifespans, and lower total cost of ownership. Ultra-reliable Vertiv™ Liebert® lithium-ion UPS solutions can thus provide an extra edge, when it comes to ensuring data center and edge site uptime.

- 2. Enabling cellular out-of-band management:** Nothing is more stressful and challenging than power failures and network outages, which take systems down and require costly, time-consuming truck rolls. These outages cost enterprises lost sales, customer interactions, and workforce productivity, while also potentially harming these companies' brand reputation for reliability. Outages also increase managed service provider (MSP) costs, as they must deploy trucks and service professionals rapidly to sites to bring systems back online.

Data center and IT teams that use Avocent ACS have between eight and 48 ports to connect devices, troubleshoot IT, and power problems remotely. When corporate networks are up, they can use TCP/IP to connect directly for in-band management processes. When networks are down, however, these teams can rely on 4G LTE cellular connectivity to access systems, speeding problem resolution and restoring system uptime. That means fewer truck rolls, which can reduce costs by 10K per year per user site.²

- 3. Gain granular management capabilities:** Serial consoles should be able to access every single power outlet and determine if they are consuming power. In addition, these management devices should be able to turn outlets on and off.

Avocent ACS provides these capabilities, but not every console server does. For example, some other manufacturers may require that users create outlet groups that can be remotely managed. So, data center and IT that want this level of control may want to put Avocent ACS on their purchase list.

- 4. Automate more processes:** Some 81 percent of IT professionals expect that network and data center management tasks will be completely automated by 2025,³ freeing teams to do more innovation work.

Avocent ACS supports those goals. Avocent ACS automates its own configuration and provides out-of-the-box configuration with Vertiv Geist rPDU and Liebert UPS devices. Avocent ACS also uses a RESTful API to call and automatically configure third-party solutions. As a result, buyers have choice and flexibility in which vendors they source equipment from.

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The ability to optimize processes continues with Vertiv™ Liebert® UPS solutions. Liebert UPS devices provide both input and output dry contacts. While one is reserved for remote power on-off capabilities, the others can be configured for purposes such as detecting environmental and battery fault conditions. As a result, if the rack UPS battery goes into an error state, the dry contact can connect to other systems. It can then trigger automated processes, such as using a UPS bypass switch to bring another UPS unit online.

Data center and IT teams can use these capabilities to support a greater range of devices and automate more processes. As just one example, Avocent® ACS can be used to daisy-chain individual rPDUs and power-cycle one or more devices at a time.

5. Sole-source your rack equipment and services: Need more equipment? Vertiv provides a wide range of IT, power, and cooling equipment to enable modern data center and edge operations. Vertiv also offers modular solutions, such as power skids and data centers, to enable buyers to deploy capacity at speed.

Beyond equipment, Vertiv™ LIFE™ Services offers remote monitoring and management capabilities. As a result, busy data center and IT teams can support growing enterprise to edge networks, deploy service when and where needed, and ensure service responsiveness when challenges arise.

Conclusion

Rack solutions now come with integrated power, cooling, and IT infrastructure and pair with management solutions and software, enabling teams to see and control infrastructure via a single pane of glass. For example, Vertiv offers Vertiv™ VR Racks that can be customized with Vertiv™ Geist™ Monitored Rack Power Distribution Units (rPDU) and Vertiv™ Liebert® GXT5 Uninterruptible Power Supply (UPS) devices for an all-in-one remote power management package. Vertiv™ Avocent® ACS Serial Console enables both in-band and out-of-band management, enabling remote monitoring and troubleshooting even when networks are down. Finally, Vertiv™ Avocent® DSView™ software provides a single-rack view of servers, networking equipment, power devices, and embedded technologies, enabling data center and IT teams to better architect their companies' continuity. As a result, these teams can help deliver the business application uptime and performance that enterprises require.

Adopt Vertiv™ technology today to capture these five benefits – as well as many others.

Learn more about Vertiv integrated rack solutions.

Take Another Look at Advanced Console Servers

How they're designed: An advanced serial console is a 1U-high device. It connects via a standard RJ45 or USB cable to the serial console port of devices.

Devices they support: These management solutions connect to Unix and Linux servers, switches and routers, sensors and USB devices, firewalls, building control systems, PDUs and UPSs.

How they connect: Serial consoles can connect via TCP/ICP for in-band management and cellular access for out-of-band management.

What they do:

- Access and monitor networking and other devices
- Automate and remotely orchestrate processes
- Control PDUs and UPSs for better power continuity
- Respond to UPS events and management requirements



Vertiv™ VR Rack



Vertiv™ Avocent® ACS



Vertiv™ Liebert® GXT5 UPS



Vertiv™ Liebert® sensor



Vertiv™ Avocent® DSView™ Management Software



Vertiv™ Geist™ Rack PDU

¹Beth Stackpole, "Pandemic Accelerates Edge-to-Cloud Digital Transformation," article, Automation World, December 15, 2021, <https://www.automationworld.com/process/iiot/article/21952832/pandemic-accelerates-edgetocloud-digital-transformation>

²Vertiv estimate.

³Macy Bayern, "81% of IT pros expect most data center and networking tasks will be automated by 2025," article, TechRepublic, February 27, 2020, <https://www.techrepublic.com/article/81-of-it-pros-expect-most-data-center-and-networking-tasks-will-be-automated-by-2025/>