



Product brochure

Vertiv™ SmartRow™ 2

Intelligent, integrated
converged infrastructure solution



The Vertiv™ SmartRow™ 2 is a pre-engineered edge data center solution complete with power, cooling, fire suppression, and all the critical pieces required to support data center availability.



30%

Reduces energy use compared to system without energy-optimized cooling¹



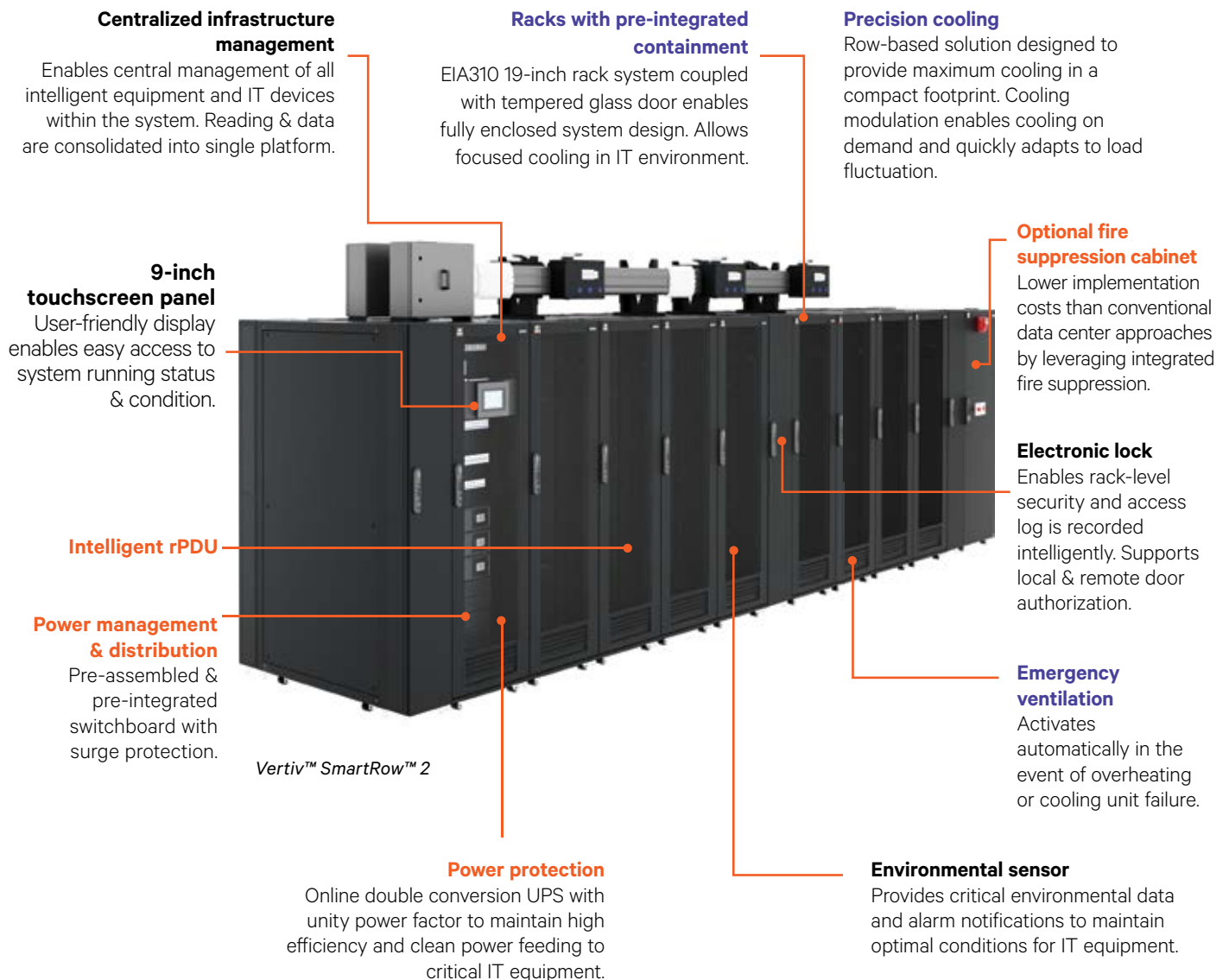
20%

Lower carbon emissions^{2*}

¹ Compared to systems without energy-optimized cooling.

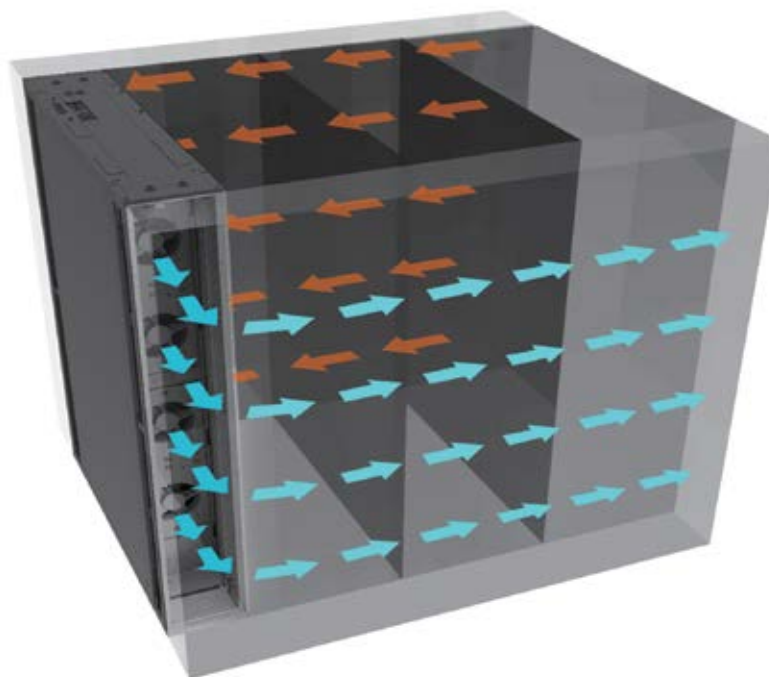
² Compared to traditional infrastructure designs.

**For illustration purposes only. Figures are estimations based upon Vertiv's internal engineering studies and analysis. Actual deployment times, costs, and savings may vary depending upon scope, specifications, geographic locations, etc.*





Top benefits of the Vertiv™ SmartRow™ 2



Fully enclosed hot aisle & cold aisle containment

Faster installation

- Vertiv™ SmartRow™ 2 is a deployment-ready solution that can be installed in in 3 to 5 days.

Helps reduce carbon footprint and save energy

- Hot and cold aisle containment reduces cooling energy consumed by up to 30% compared to a typical space with perimeter cooling.
- Cooling units include capacity modulation to reduce compressor cycles and component wear and tear.
- Multiple temperature and humidity measurement points are monitored to assist precise control over the environment.

Lower deployment costs

- The solution is engineered to eliminate most of the planning and design that normally comes with a new edge data center deployment.

Full redundancy capability helps prevent downtime

- Redundant power and cooling can optionally be built into each system to add another layer of protection from downtime.

Centralized IT and infrastructure management system

- Enable access to server's service processor (IPMI 2.0), query sensor information, execute remote plan, and conditional power cycle.

- Allows serial console management via serial connection.
- Local (control panel) and remote system health check via IP-based webpage.
- Alarm notifications via email or SMS with downloadable activity logs and alarm history.
- Integrated fire suppression system.
- Easily deploy and effectively manage an integrated IT infrastructure without being limited by building systems such as fire suppression and cooling.
- Saves space compared to room-based systems by avoiding room upgrades.
- Additionally, the low-GWP R-32 refrigerant supports carbon reduction goals without compromising performance.

Intelligent safety & security

- Systems include intelligent locks, cameras, and optional surveillance.
- Enable remote door access via IP-based webpage, local access with proximity card.

Maximize existing space with a room neutral design

- In-row power and cooling systems enable more compute capacity in a smaller footprint.
- System can be placed virtually anywhere – no raised floor is required.

Optional fire suppression system

- Consolidating computer and air conditioning equipment within a single enclosure allows efficient control of air conditioning within a smaller, more contained space. This can help reduce both cooling and fire suppression costs compared to managing an entire room.
- Inert gas systems are less cost effective than chemical agents, but can offer greater flexibility when it comes to maintaining room integrity. This helps lower TCO and avoid the need for patching and sealing of the protected space. Additionally, Inert gas supports environmental responsibility options available on the market.



Management appliance



HMI & web interface

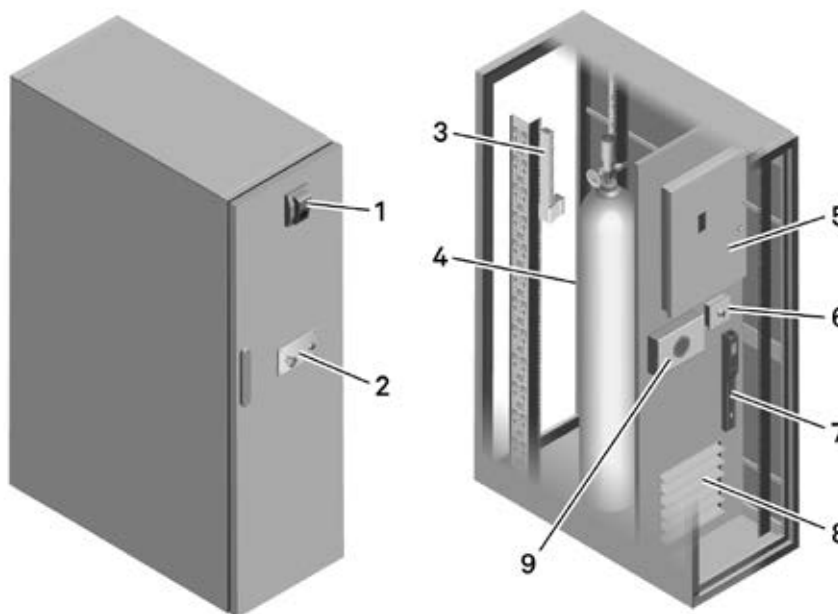


Vertiv™ SmartRow™ 2



Optional fire suppression system

- **Consolidated equipment:**
Enables efficient cooling within a compact enclosure.
- **Cost-effective:** Reduces both cooling and fire suppression costs compared to entire-room systems.
- **Optimal computing environment:** Creates a controlled setting for your IT infrastructure in a single enclosure.
- **Streamlined management:**
Simplifies IT infrastructure management across varying building system constraints.
- **Efficient deployment:** Combines fire suppression and cooling for an optimized solution.



Inert gas systems:

- **Flexible & cost-efficient:**
Designed for flexible deployment while preserving room integrity.
- **Saves money:** Helps avoid room sealing and patching, leading to improved cost.
- **Environmentally responsible:**
Inert gas systems can lower environmental impacts compared to other suppression systems.

Internal and external view of fire suppression cabinets descriptions

Number	Description	Function
1	Horn & strobe light	Activates when the system detects smoke.
2	Manual release & abort button	Manually discharge the fire suppression agent into the system, or prevent the fire suppression system from dumping due to a false alarm.
3	Terminal block	Connects power, fire alarms, and the EPO bypass switch (if desired).
4	Inert gas tank	Reduces the oxygen concentration inside the protected room until it reaches a level where combustion is no longer supported. The gas tank uses IG-55, a blend of environmentally inert, all-natural argon and nitrogen gases. The fire suppression agent enters the room within 60 seconds at a steady flow rate, preventing destructive turbulence from occurring.
5	Fire control panel	A microprocessor-based, compact, conventional fire alarm and fire suppression releasing control panel.
6	EPO bypass switch	This two-hour switch prevents activation of the UPS EPO and is used during maintenance. It is provided to minimize the chance of an unnecessary activation of the EPO system while inspecting the clean agent fire suppression system.
7	Vertiv™ Liebert® PSI5 1500 VA UPS	The The Vertiv™ Liebert® PSI5 UPS is dedicated to powering the fan when UPS output may be unavailable.
8	Louvered 3-speed fan	The fan mixes air for the fire suppression system at release. Lowest speed is for 2 to 4 rack systems. Medium speed is for 5 rack systems.
9	Very Early Smoke Detection Apparatus (VESDA) Unit	Provides the fastest detection of a combustion event as well as sensing an entire row length with a single apparatus. For more information, refer to the Xtralis VESDA VLF-500 Product Guide (P/N 7209_16) provided with your system.

Edge deployment challenges

Adding compute capacity at the edge can be a long and complicated process for IT and facility leaders.

Time consuming process

The process from planning to commissioning takes 6 to 12 months on average and is difficult to predict with confidence.

Hidden costs

Over half the cost of a deployment goes to the process, including planning, consulting, site prep, etc.

Cooling capacity

Computing generates too much heat for the existing infrastructure, requiring additional cooling capacity.

Power upgrades

New compute technologies may require more power than the current facility can handle.

Optional fire suppression

No fire suppression system upgrades to the room are needed since fire suppression is integrated into the solution.

Management

IT distributed across multiple sites and from different vendors is very challenging for IT teams to manage efficiently.

Energy efficiency

With energy costs and demand both rising at the edge, the pressure is on to find more energy-efficient technologies.





How Vertiv™ SmartRow™ 2 simplifies deployment

Pre-engineered systems simplify edge deployments with a repeatable and scalable solution, enabling business agility for future growth.



Accelerate deployments

Accelerate the deployment process by reducing planning, build, and overall deployment time.



Reduce costs

Reduce costs associated with planning, construction, and renovation while making project budgets more predictable.



Integrated cooling

Many solutions offer integrated cooling and containment to maximize cooling capacity and energy efficiency in the space.



Pre-Integrated power distribution

Solutions include busway, UPS battery backup, surge protection, and pre-integrated power distribution to IT rack enclosures to simplify installation and commissioning.



Integrated fire suppression

Easily deploy and effectively manage an integrated IT infrastructure without being limited by building systems such as fire suppression and cooling.



Remote management

Standardized, single-vendor solutions include remote management options to simplify environments.



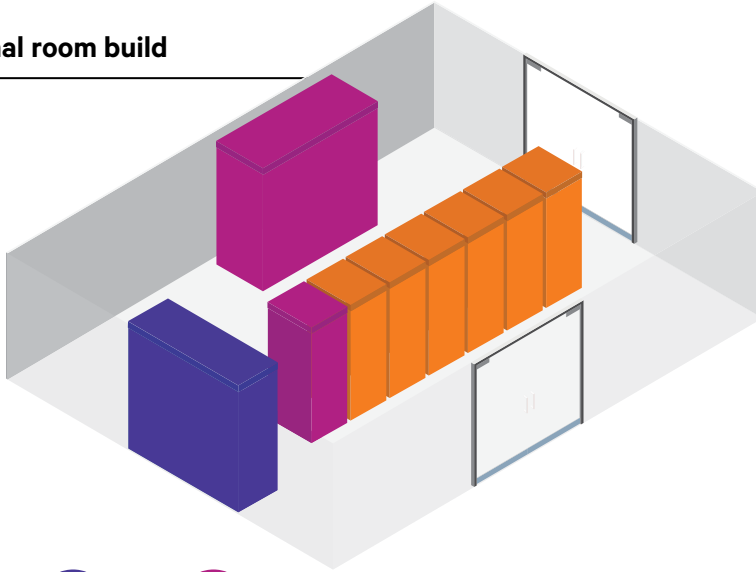
Contained in-row cooling

Contained systems with dedicated cooling can reduce cooling energy use by up to 30% and carbon emissions by up to 20%.

Vertiv is a global leader in data center power and cooling solutions.

It is time to rethink the traditional process

Traditional room build



Racks



Power

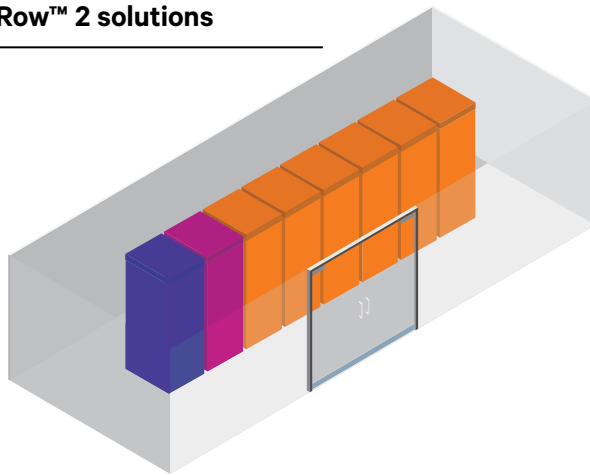


Cooling

Complex process

Months of planning, design, procurement, legal permitting, and consulting go into creating custom designs for a room build or upgrade. It takes months for each deployment, and each room is typically repeated all over again for every location.

Vertiv™ SmartRow™ 2 solutions



Racks



Power



Cooling



Fire
suppression

What's included

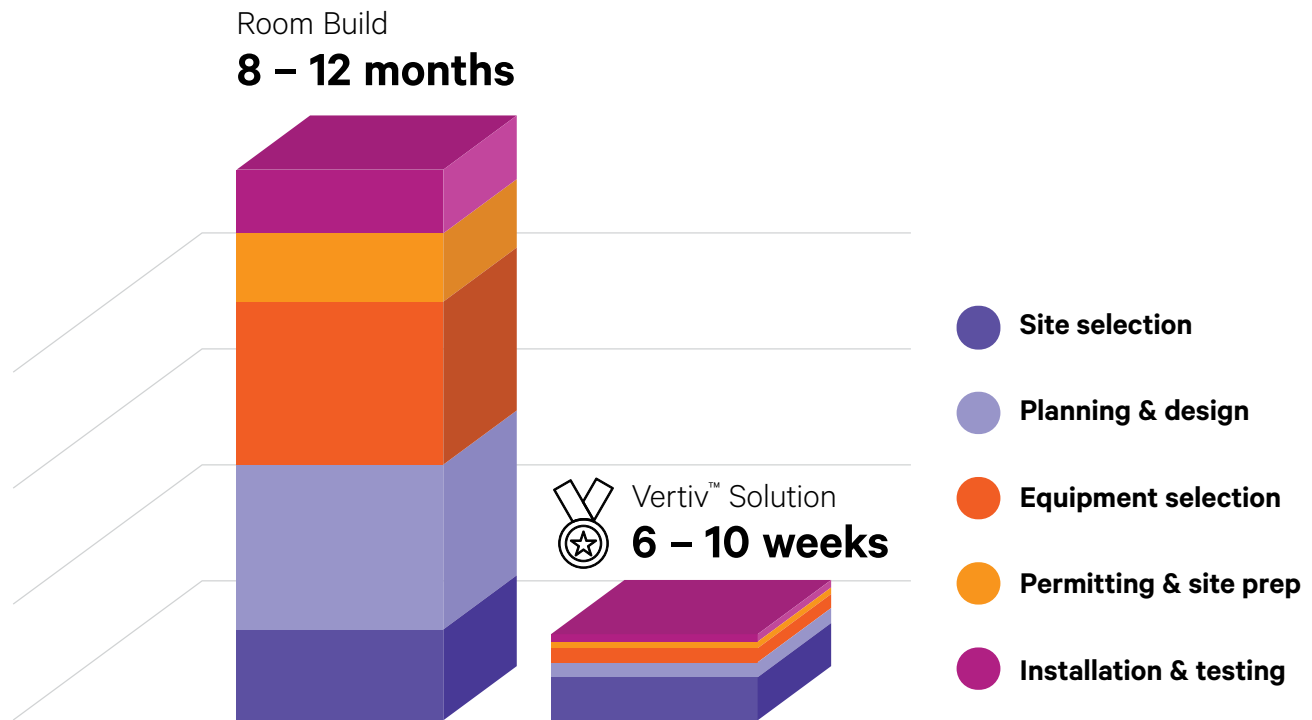
- Rack enclosures
- In-row cooling
- Hot & cold aisle containment
- Power distribution & UPS
- Power and cooling redundancy options
- Optional fire suppression system
- Remote management
- Physical security
- Fire suppression

Pre-engineered systems help streamline the design and planning process for edge deployments.



Vertiv™ SmartRow™ 2 vs room build

The Vertiv™ SmartRow™ 2 offers a simplified approach to deploying an edge data center when compared to designing and building or retrofitting a room.



Flexible system configurations

Scalable design architecture allows the solution to be tailored to your needs while remaining room neutral so that you can place the system virtually anywhere.

- IRC: In-row cooling
- PMC: Power management cabinet



IRC

PMC

Vertiv™ SmartRow™ 2 (1+3)



Vertiv™ SmartRow™
2 (1+3)



Vertiv™ SmartRow™
2 (1+4)



Vertiv™ SmartRow™
2 (1+5)



Vertiv™ SmartRow™ 2 (1+6)



Vertiv™ SmartRow™ 2 (2+6)

*Vertiv™ SmartRow™ 2 (A+B), Where A denotes the Number of Cooling (IRC) and B denotes Number of Racks (IT + Infrastructure (PMC)).
Vertiv™ SmartRow2™ can accommodate up to eight (8) IT cabinets integrated within the row-based data center.



High efficiency thermal management

Each system includes hot aisle and cold aisle containment with in-row cooling and airflow management to maximize cooling efficiency and reduce energy costs.

Intelligent monitoring

Each enclosure includes 6 sensors for precise control of temperature and humidity.

Capacity modulation

Cooling units include capacity modulation to minimize wear and tear on the compressor and extend the useful life of each cooling unit.

Emergency ventilation

Emergency fans in each rack automatically turn on in emergency situations to move heat out of the system, enabling a controlled system shutdown.

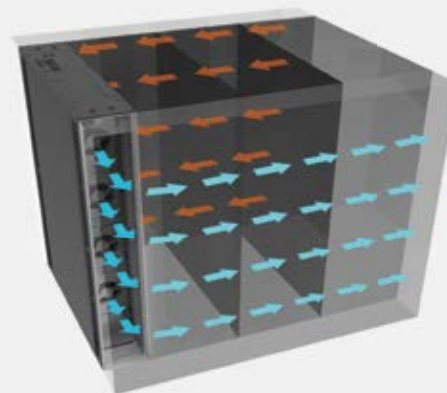


Vertiv™ SmartRow™ 2



Reduce cooling costs & CO2 emissions

In a traditional room build, precision cooling units are required to cool an entire room. The Vertiv™ SmartRow™ 2 is a fully contained system that includes hot aisle and cold aisle containment. This is an industry best practice proven to optimize cooling efficiency, which reduces the energy required to cool the system by 30%, and reduces total carbon emissions by an estimated 20%.*

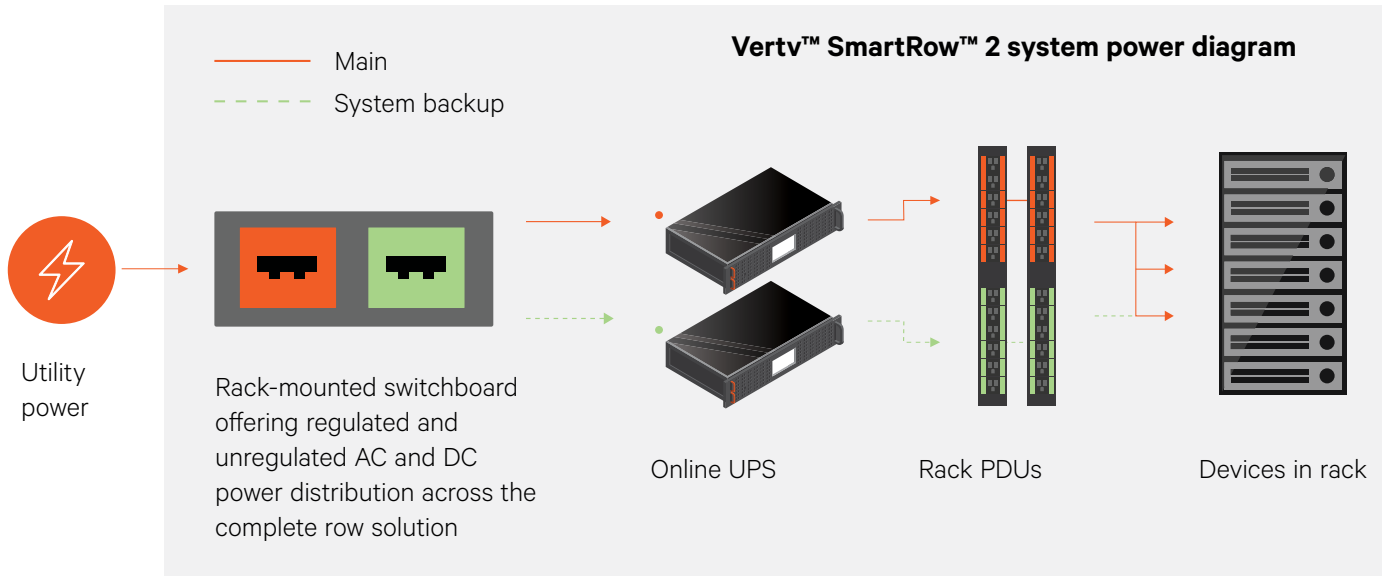


Fully enclosed hot aisle & cold aisle containment

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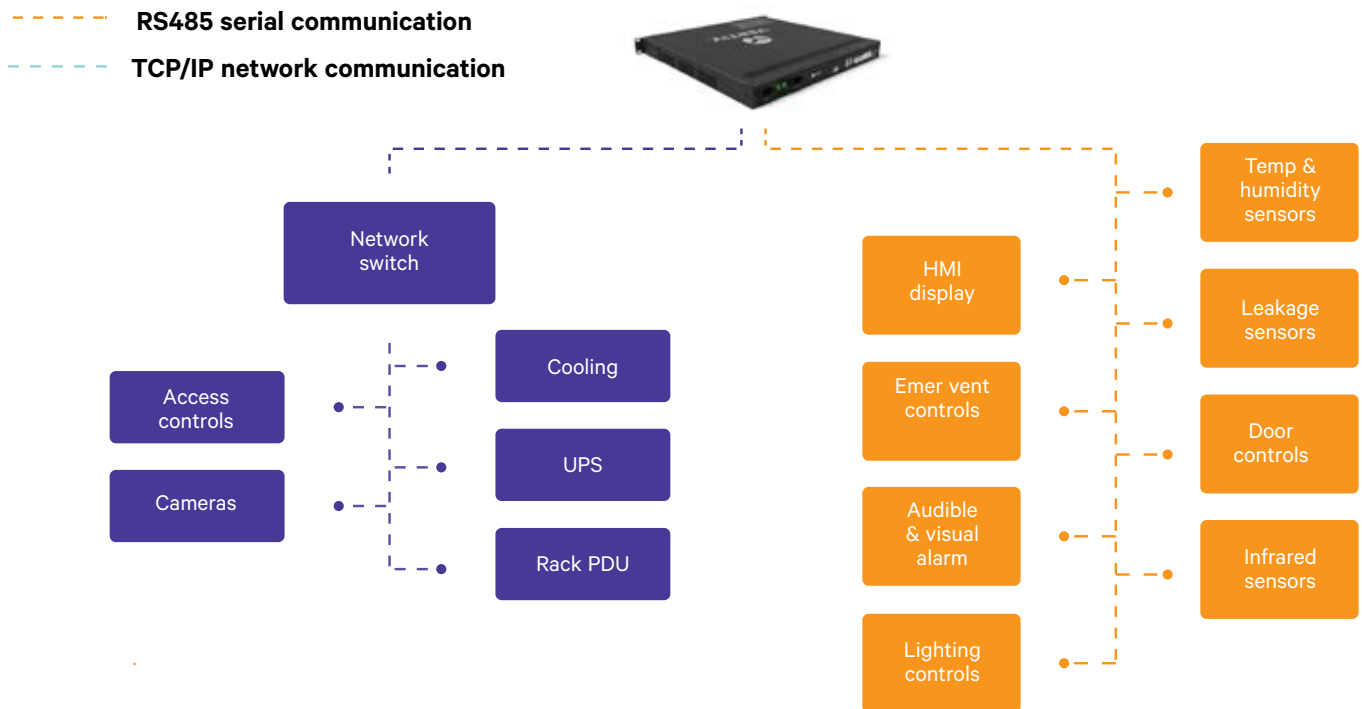
Complete power management

Each system includes pre-integrated power management complete with online double-conversion UPS, N+1 power redundancy, and pre-integrated distribution to PDUs in each rack enclosure.



Integrated monitoring & remote management

Infrastructure management gateway appliance





Site planning data

Part number	Max power capacity (kW)	IT racks	Rack type (U x mm x mm)	Capacity per rack (kW)	Cooling units	PDU type	PDU count	Distribution type	Length (mm)
SR2N03030NAB1	30	3	42Ux600x1400	10	1	35A	3	40kW PMC	2700
SR2N03030PAB1	30	3	42Ux600x1400	10	1	35A	6	40kW PMC	2700
SR2N03030FAB1	30	3	42Ux600x1400	10	2	35A	6	40kW PMC	3000
SR2N04030NAB1	30	4	42Ux600x1400	7.5	1	30A	4	40kW PMC	3300
SR2N04030PAB1	30	4	42Ux600x1400	7.5	1	30A	8	40kW PMC	3300
SR2N04030FAB1	30	4	42Ux600x1400	7.5	2	30A	8	40kW PMC	3600
SR2N05030NAB1	30	5	42Ux600x1400	6	1	30A	5	40kW PMC	3900
SR2N05030PAB1	30	5	42Ux600x1400	6	1	30A	10	40kW PMC	3900
SR2N05030FAB1	30	5	42Ux600x1400	6	2	30A	10	40kW PMC	4200
SR2N04040NAB1	40	4	42Ux600x1400	10	2	35A	4	40kW PMC	3600
SR2N04040PAB1	40	4	42Ux600x1400	10	2	35A	8	40kW PMC	3600
SR2N04040FAB1	40	4	42Ux600x1400	10	3	35A	8	40kW PMC	3900
SR2N05040NAB1	40	5	42Ux600x1400	8	2	30A	5	40kW PMC	4200
SR2N05040PAB1	40	5	42Ux600x1400	8	2	30A	10	40kW PMC	4200
SR2N05040FAB1	40	5	42Ux600x1400	8	3	30A	10	40kW PMC	4500
SR2N06040NAB1	40	6	42Ux600x1400	6.6	2	30A	6	40kW PMC	4800
SR2N06040PAB1	40	6	42Ux600x1400	6.6	2	30A	12	40kW PMC	4800
SR2N06040FAB1	40	6	42Ux600x1400	6.6	3	30A	12	40kW PMC	5100
SR2N07040NAB1	40	7	42Ux600x1400	5.7	2	30A	7	40kW PMC	5400
SR2N07040PAB1	40	7	42Ux600x1400	5.7	2	30A	14	40kW PMC	5400
SR2N07040FAB1	40	7	42Ux600x1400	5.7	3	30A	14	40kW PMC	5700
SR2N08040NAB1	40	8	42Ux600x1400	5	2	30A	8	40kW PMC	6000
SR2N08040PAB1	40	8	42Ux600x1400	5	2	30A	16	40kW PMC	6000
SR2N08040FAB1	40	8	42Ux600x1400	5	3	30A	16	40kW PMC	6300

- Table above shows data only for SR2 solutions without fire suppression

- Part number last digit : 1 without fire suppression, 2 with integrated fire suppression

- SmartRow2 can accommodate up to two (2) 800mm wide IT cabinets for any given configuration

