VERTIV

Vertiv™ SmartRow™ 2

Intelligent, Integrated
Converged Infrastructure Solution

Vertiv™ SmartRow™ 2

The Vertiv™ SmartRow™ 2 is a Pre-Engineered Edge Data Center complete with power, cooling and all the critical pieces required to ensure data center availability.

80%
Faster Deployment*

30%
Lower Deployment Cost*

20%
Lower Carbon Emissions*

*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.

Racks with Containment

EIA310 19-inch rack system coupled with tempered glass door enables fully enclosed system design. Allows focused cooling in IT environment.

Centralized Infrastructure Management

Enables central management of all intelligent equipment and IT devices within the system. Reading & data are consolidated into single platform.

Precision Cooling

Row-based solution designed to provide maximum cooling in a compact footprint. Cooling modulation enables cooling on demand and quickly adapts to load fluctuation.

9-inch Touchscreen Panel

User-friendly display enables easy access to system running status & condition.

Power Management & Distribution

Pre-assembled & pre-integrated switchboard with surge protection.

Power Protection

On-line double conversion UPS with unity power factor ensures clean power feeding to critical IT equipment.

Environmental Sensor

Report critical environmental information and alarm notification. Ensure IT equipment is kept in desired condition.

Emergency Ventilation

Activates automatically in the event of overheating or cooling unit failure.

Electronic Lock

Enables rack level security and access log is recorded intelligently. Supports local & remote door authorization.

- Power Management & Protection
- Thermal Management
- Management & Monitoring

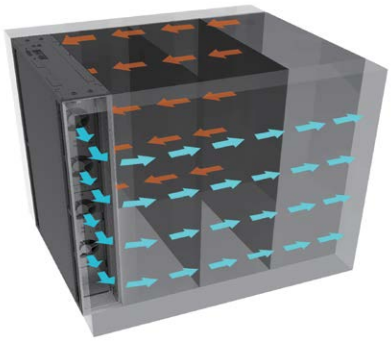
Top Benefits of the Vertiv™ SmartRow™ 2

Faster Installation

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

Reduce Carbon Footprint and Save Energy

- Hot and cold aisle containment reduces cooling energy consumed by approximately 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 ensure precise control over the environment.



Fully Enclosed Hot Aisle & Cold Aisle Containment

Lower Deployment Costs

- The solution is Engineered by Vertiv 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.

Management Appliance

HMI & Web Interface

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.

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 – 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.

Management

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

Sustainability

With energy costs and demand both rising at the Edge, the pressure is on to find more sustainable technologies.

Did you know that 60% of network outages are related to power or cooling?

How Vertiv™ SmartRow™ 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 and make the budget for the project 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 can include Busway, UPS battery backup, surge protection, and pre-integrated power distribution to IT rack enclosures to simplify installation and commissioning.

Remote Management

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

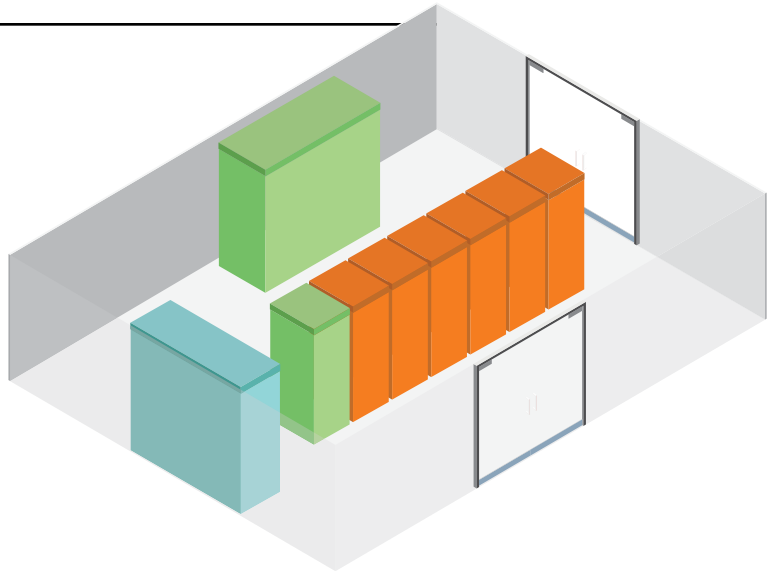
Contained In-Row Cooling

Contained systems with dedicated cooling are proven to reduce cooling energy use and carbon emissions by as much as 30%.

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

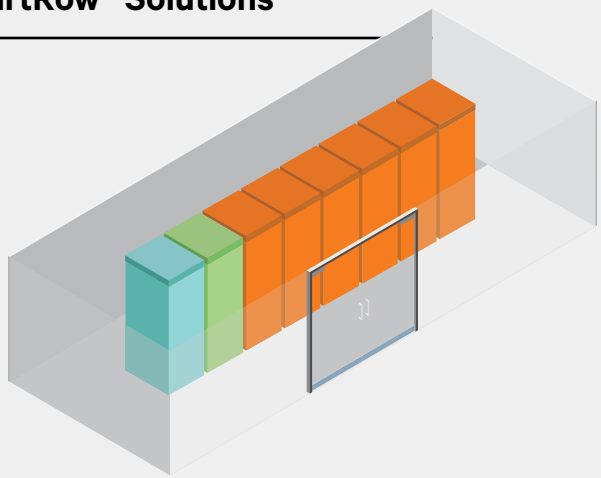
Months of planning, design, procurement, legal permitting, and consulting go into creating custom designs for a room build or upgrade. It takes months for each deployment, and each room is typically repeated all over again for every location.

Planning and labor consume

50%

of the deployment cost

Vertiv™ SmartRow™ Solutions



Racks Power Cooling

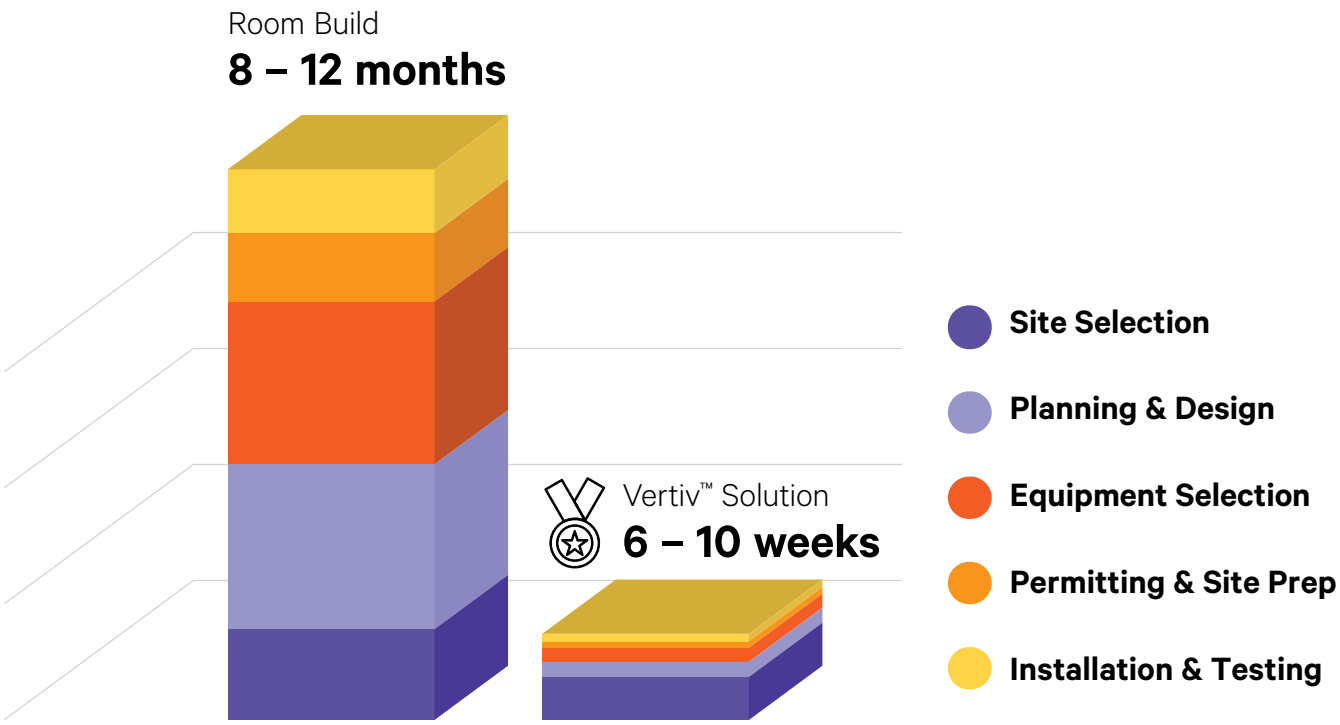
What's Included

- Rack Enclosures
- In-Row Cooling
- Hot & Cold Aisle Containment
- Power Distribution & UPS
- Power and Cooling Redundancy Options
- Remote Management
- Physical Security

Pre-Engineered Systems eliminate most of the design and planning that goes into Edge deployments.

Vertiv™ SmartRow™ 2 vs Room Build

The SmartRow™ 2 offers a simplified approach to deploying an Edge Data Center when compared to designing and building or retrofitting a room.



80% Faster time to deployment*

30% Initial cost savings per deployment*

20% Reduction in carbon emissions*

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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 | IT Rack | Vertiv™ SmartRow™ 2 (1+3)

Vertiv™ SmartRow™ 2 (1+2)

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))*

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 in each enclosure to ensure precise control over 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.

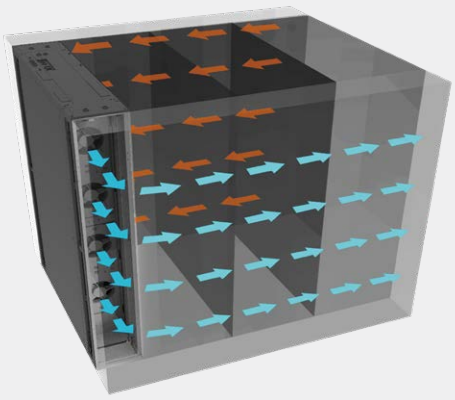
Emergency Ventilation

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

IRC A IRC B

Reduce Cooling Costs & CO2 Emissions by 20%

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 significantly increase 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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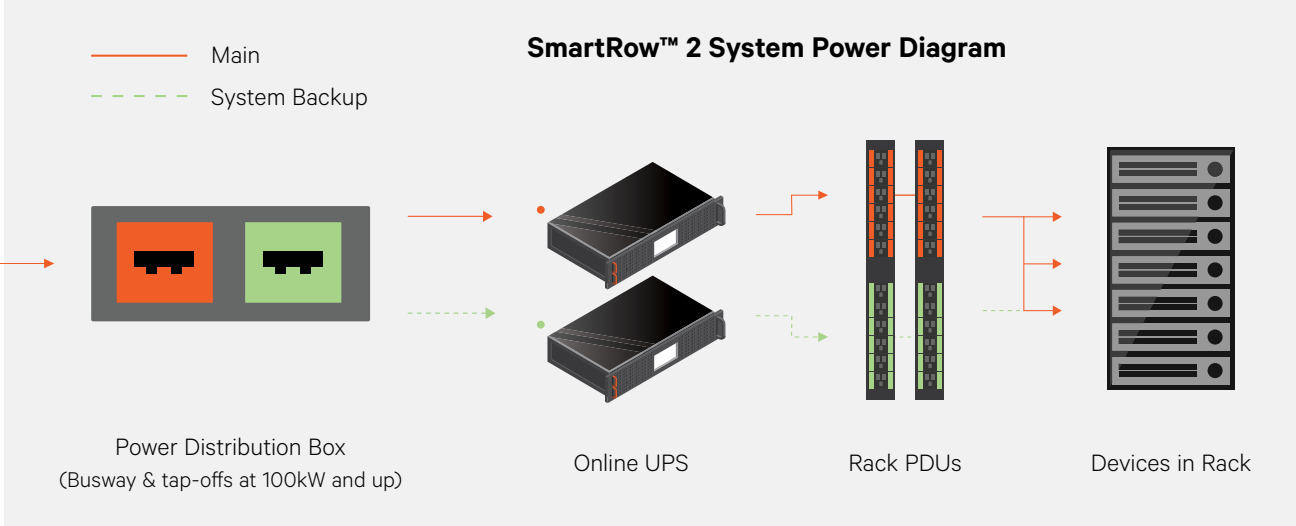
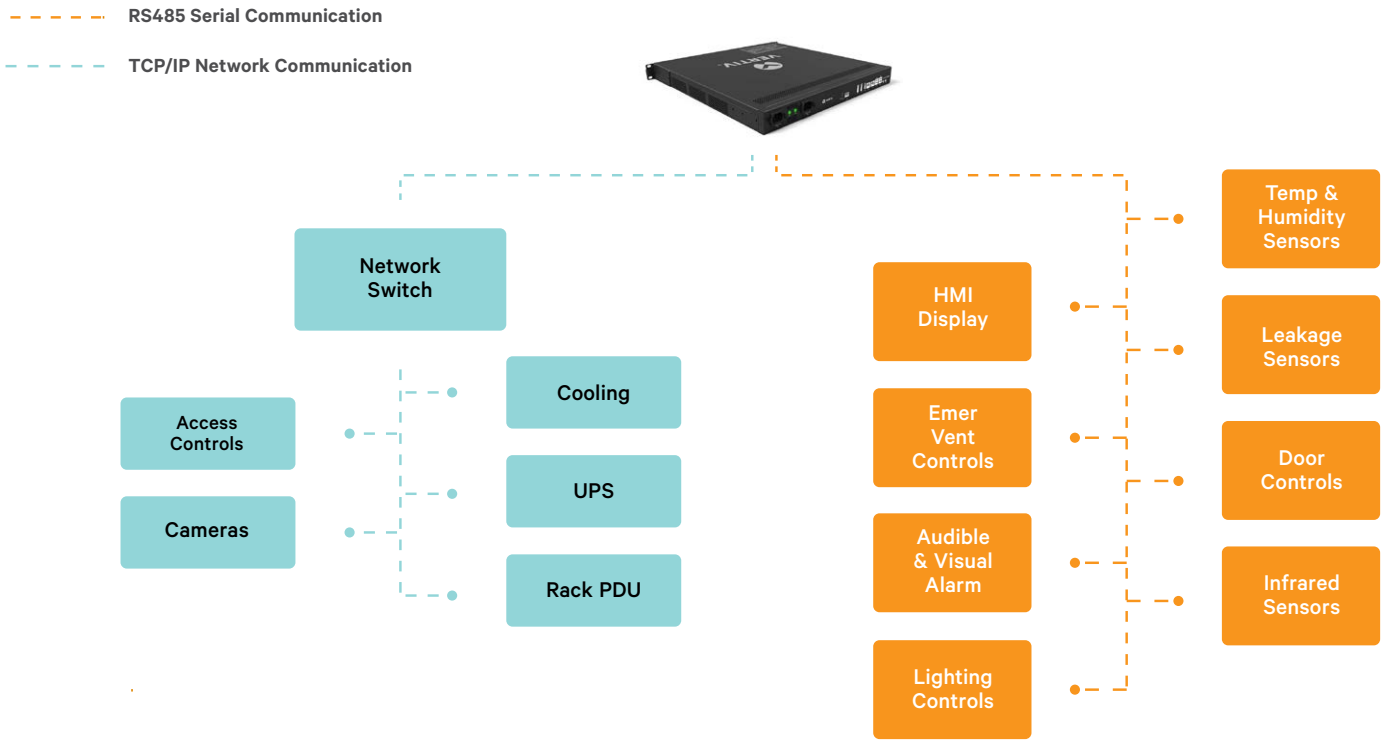
Complete Power Management

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)
SR2N02010NAA1	10	2	42Ux600x1400	5	1	30 A	2	10kW PMC	2100
SR2N02010PAA1	10	2	42Ux600x1400	5	1	30 A	4	10kW PMC	2100
SR2N02010FAA1	10	2	42Ux600x1400	5	2	30 A	4	10kW PMC	2400
SR2N03010NAA1	10	3	42Ux600x1400	3,3	1	30 A	3	10kW PMC	2700
SR2N03010PAA1	10	3	42Ux600x1400	3,3	1	30 A	6	10kW PMC	2700
SR2N03010FAA1	10	3	42Ux600x1400	3,3	2	30 A	6	10kW PMC	3000
SR2N03020NAA1	20	3	42Ux600x1400	6,6	1	30 A	3	20kW PMC	2700
SR2N03020PAA1	20	3	42Ux600x1400	6,6	1	30 A	6	20kW PMC	2700
SR2N03020FAA1	20	3	42Ux600x1400	6,6	2	30 A	6	20kW PMC	3000
SR2N04020NAA1	20	4	42Ux600x1400	5	1	30 A	4	20kW PMC	3300
SR2N04020PAA1	20	4	42Ux600x1400	5	1	30 A	8	20kW PMC	3300
SR2N04020FAA1	20	4	42Ux600x1400	5	2	30 A	8	20kW PMC	3600
SR2N05020NAA1	20	5	42Ux600x1400	4	1	30 A	5	20kW PMC	3900
SR2N05020PAA1	20	5	42Ux600x1400	4	1	30 A	10	20kW PMC	3900
SR2N05020FAA1	20	5	42Ux600x1400	4	2	30 A	10	20kW PMC	4200

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