



INNOVATION

Powering and Digitizing the Economy

Presented by Ken Lau
Partner Manager



Our technologies ensure that **Life Is On**
everywhere, for everyone and at every moment.

Schneider Electric is leading the digital transformation of energy management and automation

Key figures for 2018

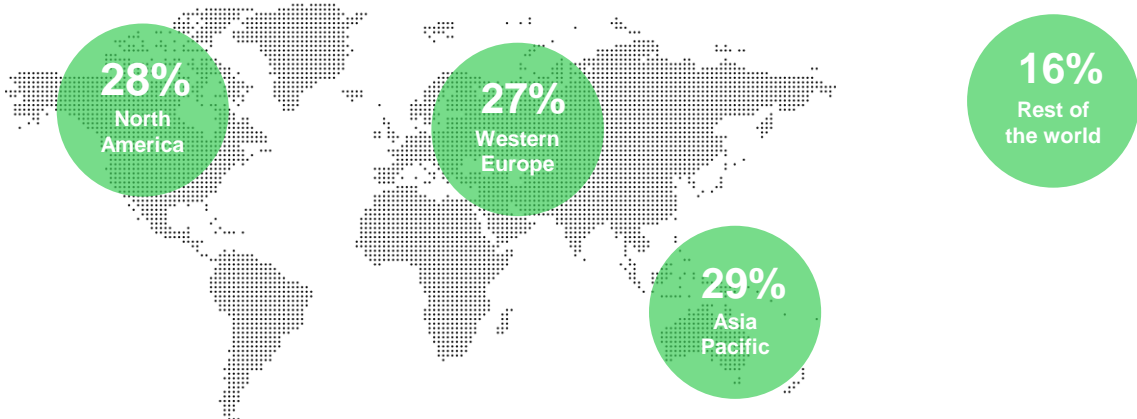
5%
of revenues devoted to R&D

€26 bn
2018 revenues

42%
of revenues in new economies

137,000+
employees in over 100 countries

A well-balanced global presence (2018 revenues breakdown)



Four end markets:



*Based on non-GAAP FY 2018 orders

A man with dark hair and glasses, wearing a dark sweater over a collared shirt, is looking directly at the camera. He is in a modern office environment with other people blurred in the background. The lighting is warm and professional.

Edge Solution of Schneider Electric

helps increase customer satisfaction

Agenda



Trends driving Innovation

Computing Eco Systems...

Edge Computing...

What Local / Regional Edge ?

LEC – Local Edge Configurator

Reliance on Data Centers is increasing and is not only driven by IoT but also by these major trends

Digital TRAFFIC

3x

growth of global data center IP traffic over the next 5 years

Source: Cisco Cloud Index Report 2015

Internet of THINGS

20.8 B

connected things by 2020

Source: Gartner, 2016

Data PRIVACY

Up to **4%**

total annual turnover fine for failing to comply with the EU's GDPR by 2018

Source: EU Data Protection Reform

Edge COMPUTING

40%

of IoT data will be stored, processed, analyzed and acted upon at the edge

Source: IDC WW IoT Predictions, 2015

The centralised cloud was conceived for these applications



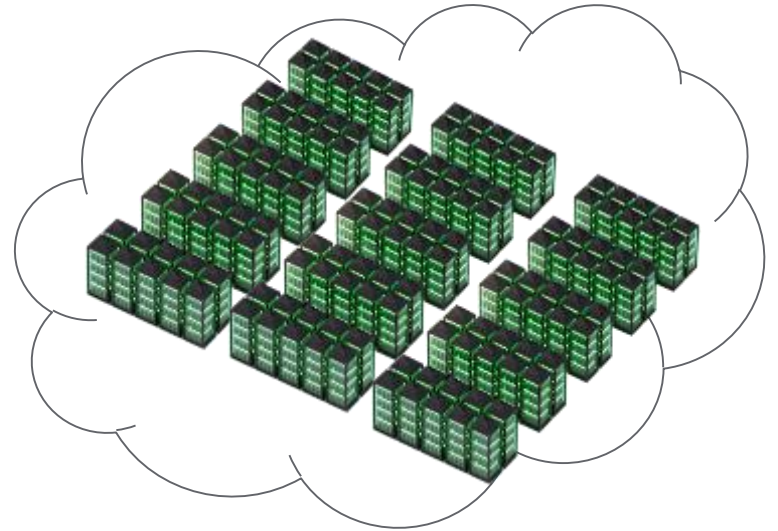
E-mails



Payroll



Social media



But, cloud was not designed for new IoT applications, which redefined expectations of performance and availability



Key Challenges:
Latency
Bandwidth
Regulations

Cloud

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Digital Transformation Brings New Bandwidth, Security, and Privacy Requirements



Enterprise: Retail, banking, and branch offices



Healthcare and Education



Government and Military



Industrial: Oil & gas, mining, manufacturing

Examples of Edge Applications

Office branch



- ✓ Antivirus & Firewall
- ✓ Windows updates
- ✓ Disaster back up and recovery
- ✓ CRM tools deployment (such as SAP, etc.)
- ✓ VoIP and telepresence
- ✓ Videos streaming and content delivery

Retail



- ✓ Self-service kiosk (order, check-out and payment processing)
- ✓ Infrared beacon technology
- ✓ Smart fitting room (AR)
- ✓ Radio-Frequency Identification (RFID)

Banking



- ✓ Video Teller Machine
- ✓ Banker tablet with 360 view of customers
- ✓ Robot greeter
- ✓ Biometric authentication
- ✓ Real-time fraud detection

Examples of Edge Applications

Education



- ✓ Tablet-based teaching
- ✓ Virtual labs (using VR and AR)
- ✓ R&D
- ✓ Students' record digitization.
- ✓ 24/7 WiFi campus-wide
- ✓ Surveillance network

Government



- ✓ Self-service kiosk
- ✓ Automated customs clearing
- ✓ Biometric authentication
- ✓ Facial and behavioral surveillance system.
- ✓ Drones
- ✓ Smart City

Industrial



- ✓ Real-time data-driven exploration
- ✓ Automation
- ✓ Predictive maintenance
- ✓ Unmanned warehousing

Edge solution for Edge Computing demands

Products Category

- Power (Smart-UPS / Smart-UPS Online and above)
- Rack & Accessories
- Power Distribution (Rack PDU)
- Security & Environmental Monitoring
- Cooling (InRow)
- DCIM (DCE / DCO)
- Services



Standardized & Redundant Infrastructure

- Options & Capabilities for different business models

Pre-Integrated

Pre-Integrated physical infrastructure for micro data centers, orderable as SKUs*



Micro Xpress
24U SX

Micro Xpress
42U SX



New Micro Data Center Xpress

Pre-configured

Vendor approved reference designs and Cisco UCS Certification



Accelerate your business potential
with innovative IT Services



Certified Reference Architectures
with Industry Alliances

Configure to order

Configure to order integrated physical infrastructure that scales at the rack level



New Local Edge Configurator!

Custom Rack and PDU (Region dependent)

Custom designed racks and PDUs for highly specialized deployments



Best Practices for Local Edge Sites:

- Standardized and Redundant Deployment
- Remote Site Management
- Physical Security

EcoStruxure IT

Overview of Architecture

ON-PREMISE SOLUTIONS

DCIM - Data Center Infrastructure Management

CLOUD BASED SOLUTIONS

DMaaS - Datacenter Management as a Service



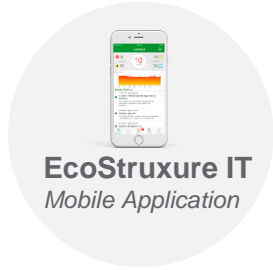
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Overview of Market

Cloud-based



Asset Advisor
Remote Monitoring Service



IT Advisor
Planning & Modeling
March 2019



IT Expert
Monitoring

On-premises



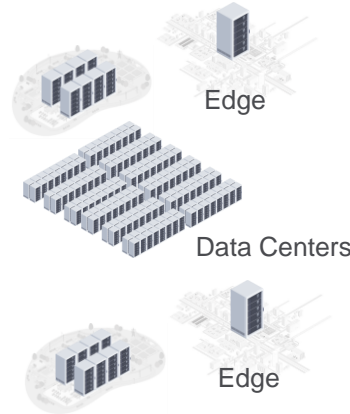
Data Center Operation
Planning & Modeling



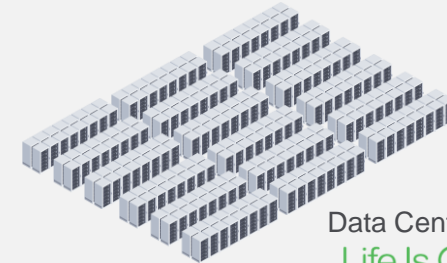
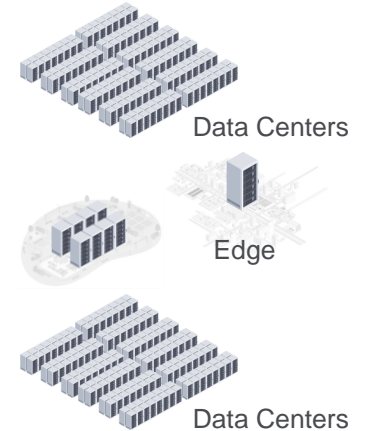
Data Center Expert
Monitoring

MARKET

PRIMARY



SECONDARY



Data Centers
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Overview of offers



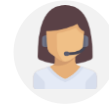
VISIBILITY

Data Center Expert
IT Expert



INSIGHTS

Data Center Operation
IT Advisor



24/7 MONITORING

Asset Advisor



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Overview Dashboard

< Back to customers

You are viewing EcoStruxure IT Expert as Global View

EcoStruxure IT

Dashboards

Inventory

Incidents

Assessments

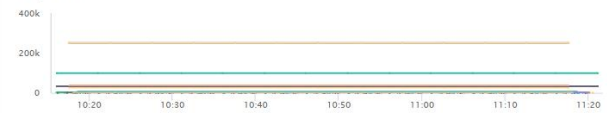
Support

All locations + 57 | ! 42 v

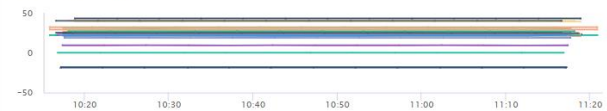
Alarm Status



Output Power



Inlet Temperature



57

Critical

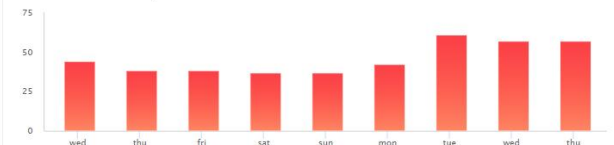
42

Warning

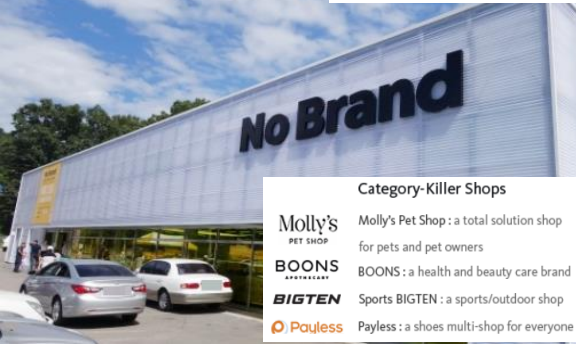
Latest alarms

- Device Communication Alert**
 ATS | ATS - 045-120B
Jan 24, 2019 11:17 AM (4 minutes): The ATS "ATS - 045-120B" is not responding.
- Unit Communication Fault**
 Battery Manager | Battery Management System
Jan 24, 2019 10:06 AM (an hour): A communication fault exists at unit 2.
- Unit Communication Fault**
 Battery Manager | Battery Management System
Jan 24, 2019 10:06 AM (an hour): A communication fault exists at unit 1.
- Air Filter Clogged Fault**
 CRAC | Name
Jan 24, 2019 7:47 AM (4 hours): An air filter clogged fault exists.
- Wireless Sensor Inactive**
 EMS | CPI Rack-NB250
Jan 23, 2019 8:44 PM (15 hours): Inactive wireless sensor Exhaust Temp at Rear of CPI Rack

Critical Alarm History



Shinsegae E-mart



- Category-Killer Shops**
- Molly's PET SHOP** : a total solution shop for pets and pet owners
 - BOONS** : a health and beauty care brand
 - BIGTEN** : a sports/outdoor shop
 - Payless** : a shoes multi-shop for everyone

Customer Background

- E-mart is the largest retailer in South Korea. There were 160 stores across the country as of Dec.2016. It was founded on Nov.1993 by Shinsegae group as the first discount retailer in South Korea.

Customer Challenge

- Monitoring & Managing for quick action
- Protect critical data and POS system from power problems by supplying clean and reliable network-grade power

The Solution

- StruxureWare Data Center Expert Basic : AP9465
- SMT2200/3000RMI2U, SRT5KRMXLI x 260set
- Smart-UPS VT 15,20,30kVA x 120set
- Network Management Card : AP9630, AP9631

Competitor

- Vertiv
- RAMElectronics Korea

Applications of Local Edge

- NoBrand : Stabilize Power for 3 POSs(200W each) fed by centralized UPS at the wiring closet.
- E-mart : SUVT installed in SVR room is protecting both POSs(15-20) and Server room.

Value Proposition & Customer Benefits

- Centralized view of power monitoring
- Early detection and quick resolution of downtime

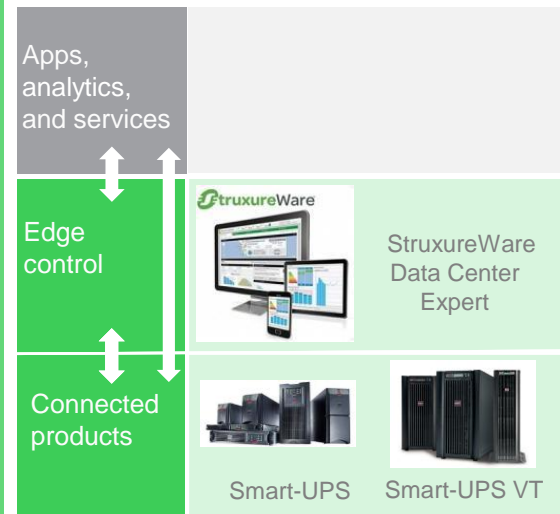
Discount Stores



- E-mart : the No. 1 discount store in Korea
- E-mart Traders : the EDLP market for small business owners

E-mart is the first hypermarket franchise in Korea, and a retail company devoted to creating joyful lifestyle of customers

EcoStruxure for Data Center
Innovation At Every Level



Case Study: Samuel Simmonds Memorial Hospital - Alaska, USA



Barrow, Alaska



"I was thrilled to be able to get all the pharmacy IT gear into one CX."

—Adam Y. Smith
Information Systems
Administrator
Samuel Simmonds
Memorial Hospital

Challenge

- Cope with patients' data increased digitization while providing the best security standards
- Remote location requires "Server-Room-in-a-box" type of solution

Solution

- SmartBunker CX 24U * 10 units
- Smart-UPS with Network management cards for remote monitoring

The Results: Life is On with...

"The decision to purchase the NetShelter CX has saved our medical center roughly **\$150,000** for not having to put in dedicated cooling for our 4 data centers. Our power saving costs have been approximately **\$1,500 to \$3,000** per month."

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Murdoch University

Top 100 young universities in the world

The Customer

- Based in Perth, mission is to be a creative force for current and future generations; Providing cutting-edge learning, teaching and research facilities to students and teachers.

Customer Challenge

- Ageing infrastructure
- Build a robust and reliable IT innovation hub for an immersive learning experience.
- Offer a 24/7 work space for student/teacher digital experience.

The Solution

- EcoStruxure IT
- APC Hot Aisle Containment system was an extremely ideal solution due to its real-estate footprint, efficiency and a direct connection to the water cooling system
- BMS integration with EcoStruxure Building that allows an overview of the entire space.

The Results

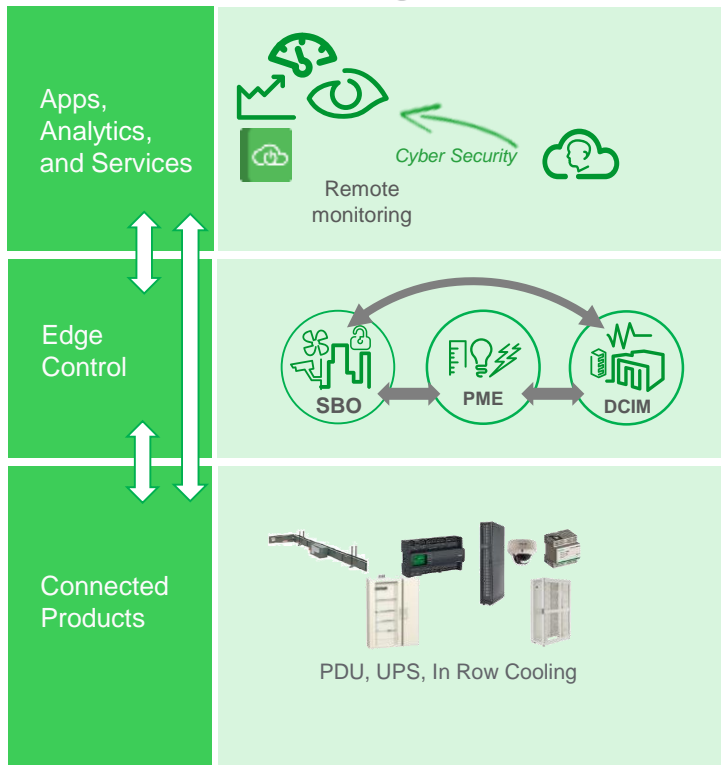
- Helped students understand real-life working environments
- Leading to greater learning, research and maximum flexibility
- First institution in Western Australia to have this infrastructure

Customer Testimony

"The day Schneider came with EcoStruxure IT, it just materialised what IoT should actually be, that central environment where everything reports to a central point and then you can have that global picture and that's what we love about the product."

EcoStruxure Edge Solutions

Innovation At Every Level



Boehringer Ingelheim NZ

Leading pharmaceutical company



The Customer

- Leading pharmaceutical company worldwide
- Operations in NZ grew from one to three offices
- Focus on environment protection and sustainability

Customer Challenge

- Due to diverse environment, customer requires local infrastructure and locally-installed applications.
- Existing infrastructure had no capacity for chilled water to run throughout the building services

The Solution

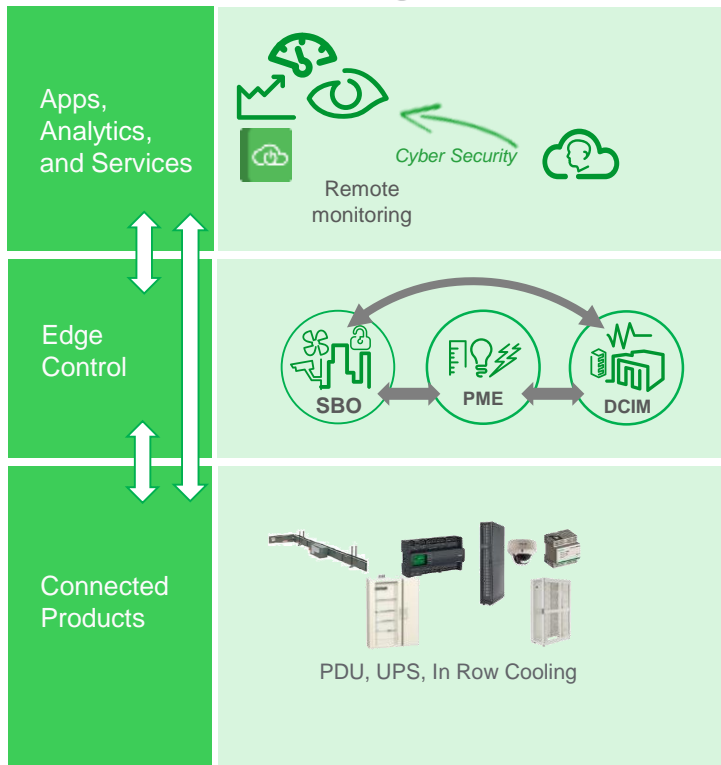
- APC by Schneider Electric deployed the EcoStruxure architecture. It supplied and installed a complete data centre solution including server racks, power distribution units (PDUs), uninterruptible power supplies (UPSs) and InRow Cooling.
- Self-Chilled In-Row cooling was chosen to ensure the two server racks are kept running at efficient and effective temperatures.
- Double redundancy across UPS and cooling systems required for reliability
- Temperature/ humidity control for energy efficiency

Customer Testimony

"What impressed me most was the technical expertise of the Business Development Manager, Sergei Vovchak, and the engineering team. They provided us with the right solution and made the whole project trouble-free."

EcoStruxure
Innovation At Every Level

Edge Solutions



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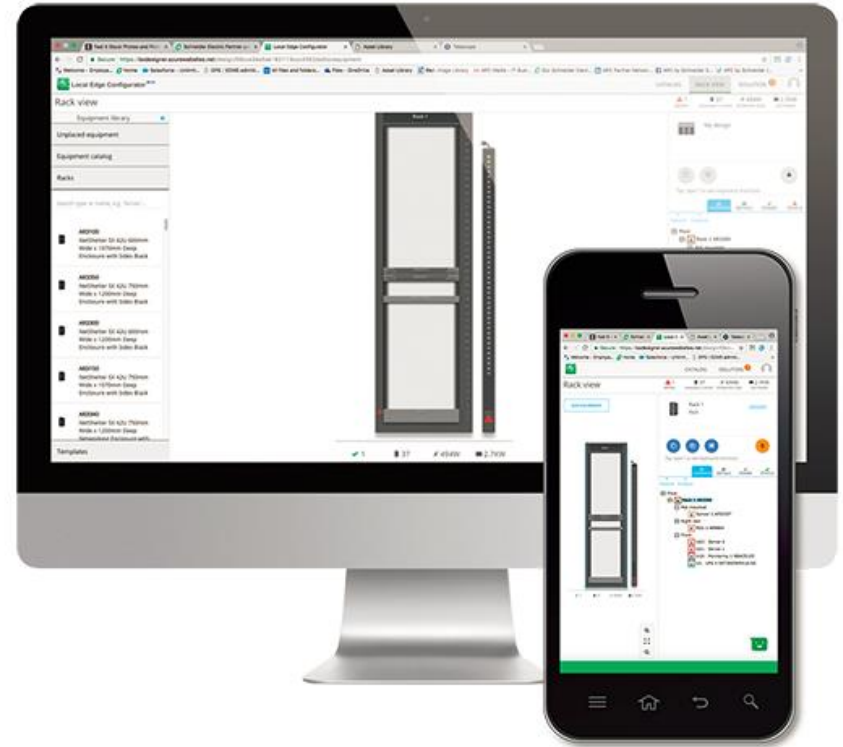
Local Edge Configurator

<https://designportal.apc.com>

Local Edge Configurator – Your Small IT Designer Tool

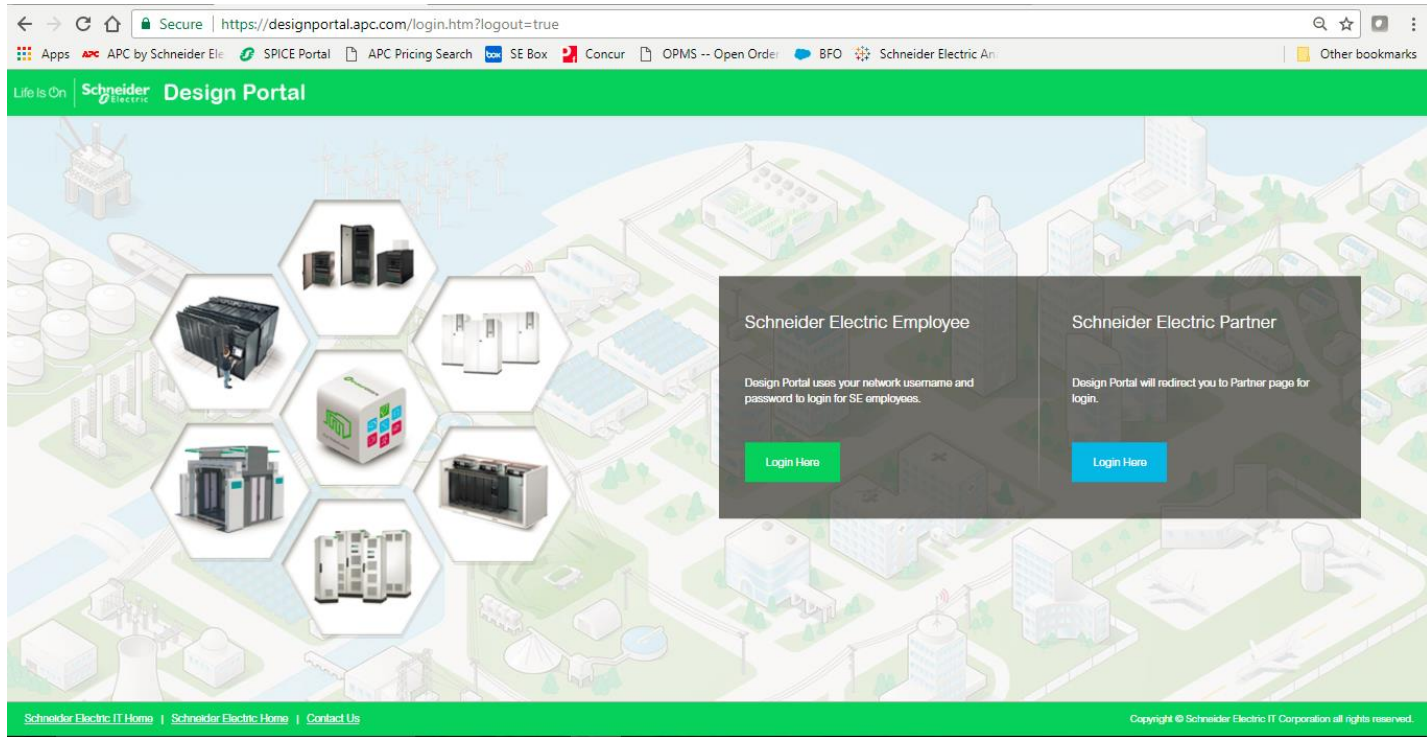
NEW!

- 1 **Layout your complete IT rack**, including 3rd party servers, storages, etc.
- 2 **Save time** using recommendations, warning and saved templates.
- 3 **Design true solutions** including PDU, remote & environmental management, and accessories.
- 4 **Easily generate and customize** customers solutions reports (BOM, Rack elevation, assembly, etc.)



Log In to Design Portal

- Log in to Design Portal at <https://designportal.apc.com>.




Access to Design Portal

Schneider Electric | Design Portal SOLUTIONS REFERENCE TOOLS SUPPORT CREATE SOLUTION Quick Search...

Training Solution Cancel Solution


Solution Design :



InfraStruxure™ Designer

A planning and design tool for creating high-availability Data Centers.

Configure



Local Edge Configurator

Micro Data Center and Rack Configurator Tool.

Configure

Configure

Key Features

Accessible on mobile, tablet and laptop browsers.

<https://designportal.apc.com>

Layout entire IT deployment includes 3rd Party IT Devices

Search and add from a refreshed catalog of rack mountable equipment

Drag and drop equipment into rack

Automatically ensure validity of solution

Copy/paste racks or save as template for future use

Get rack assembly and shipping reports

The screenshot displays the 'Local Edge Configurator' software interface. The main window is titled 'Rack view' and shows a 3D perspective of a server rack. The rack is labeled 'Rack 2 (3342U...)' and contains several server units, including 'SERVER 4', 'SERVER 3', 'SERVER 2', and 'SERVER 1', along with two 'UPS' units. The interface includes a top navigation bar with 'CATALOG', 'RACK VIEW', and 'SOLUTION' tabs. On the right side, there are summary statistics: 'VERIFIED', 'AVAILABLE U SPACE 10', 'ESTIMATED LOAD 800W', and 'UPS POWER 4.3KW'. Below these are icons for 'Rack 2 Rack' and 'AR3100SP'. A 'Tip: type ? to see keyboard shortcuts' is also present. The right panel shows 'Properties' (APC NetShelter SX 42U, 600mm Wide x 1070mm Deep, Enclosure with Sides, Black -2000 lbs, Shock Packaging) and 'Physical' (311.0 kg, content 186.1 kg) information. The 'Shipping' section shows 242.2 kg, and the 'Power' section shows a total load of 800 W and a capacity of 4.3 kW. A 'SEND FEEDBACK' button is located at the bottom right. On the left side, there is an 'Equipment library' section with 'Unplaced equipment' and 'Equipment catalog' tabs. The 'Equipment catalog' is currently active, showing a search bar and a list of HP servers: HP Cloudline CL2200 G3 1211R Server, HP Cloudline CL5200 G3 Server, HP Proliant DI1000 Multi Node Server, HP Prosignia Server 720, HP Sa2150 Cache Server, HP Server Rx3600, and HP Server Rx6600. The 'Racks' and 'Templates' sections are also visible at the bottom left.

Q&A

A photograph of a man in a light purple shirt sitting at a desk in an office. He is smiling and looking towards the left. A laptop is open in front of him. To his right is a blue filing cabinet with a white paper tray. The background is slightly blurred, showing office shelves and a poster with a diagram.

THANK YOU.

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