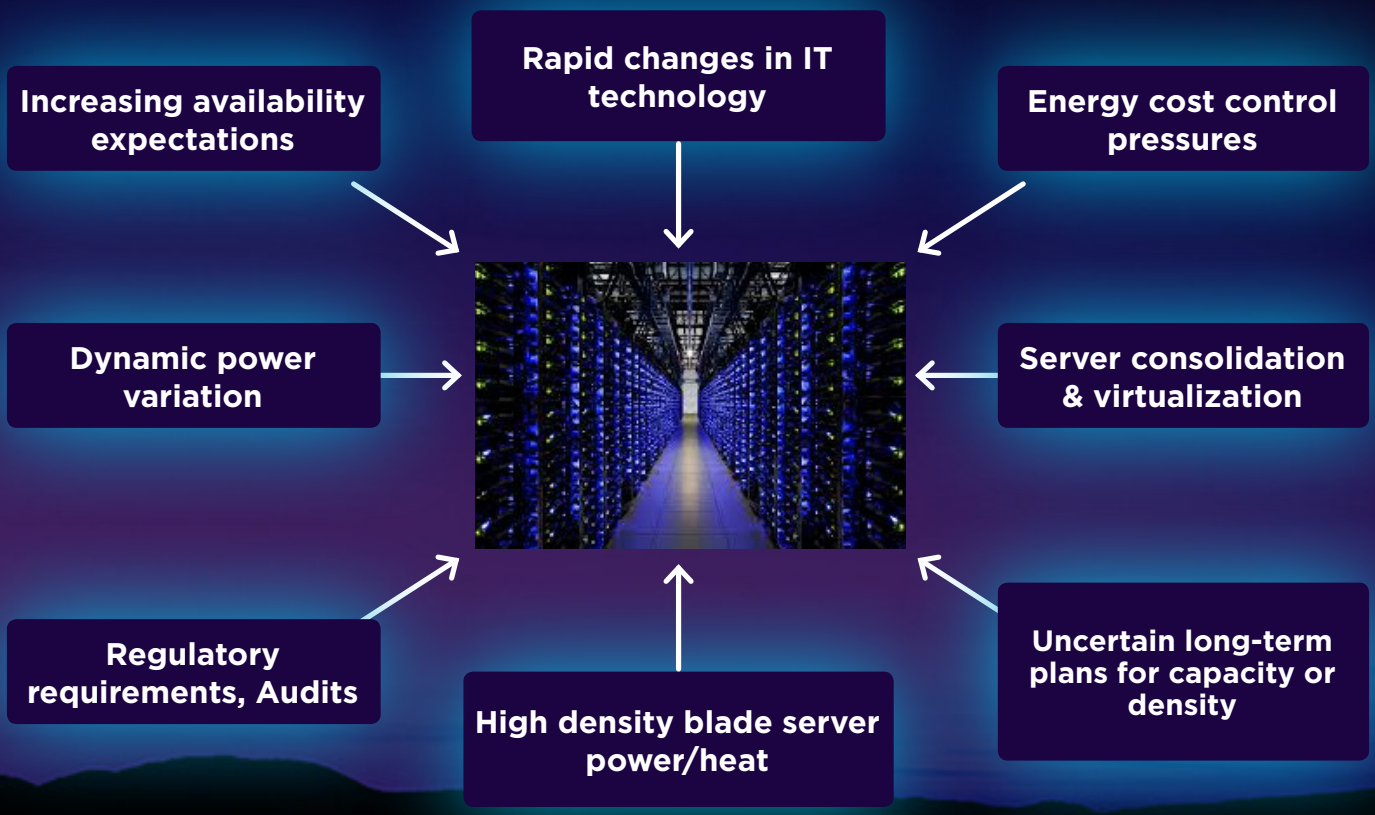
Data Centre Issues & Challenges, Market Opportunities and Solutions

Server Technology
Quality Rack Power Solutions

DATA CENTRE DISTRIBUTION
Delivering Datacentre Solutions

Key challenges that
Datacentres are facing



Servertech can help simplify the complexities of datacentre power management challenges

Server Technology Snapshot

Core Competency: Cabinet based AC and DC Power Infrastructure solutions

- **Differentiators:** Quality, Reliability, Accuracy, Expertise, Support, Options, IP Ownership
- **Headquarters:** Reno, NV
- **Founded:** 1984
- **Worldwide** locations
- **1000+** Customers

Industry leading Data Centre Power Management solutions, for 30 years..

Smart Rack Power Distribution (AC & DC)	Environmental Sensors	Power Management software
Basic, PDU metering (PIPS) Socket-Level Metering (POPS) Outlet & Unit Switching	Temperature & Humidity	Analytics Reporting, trending, Energy Management

Capacity planning

Only through power measurements for individual equipment can IT Managers know what power is being drawn to aid energy efficiency & capacity planning efforts.

With the knowledge gained in real-time monitoring you can manage smarter;

- Identify non working processing assets
- Identify low efficiency processing assets (lots of power draw for little computational power)
- Assist capacity planning against the design rating for all power protection, distribution & cooling infrastructure equipment
- Assist capacity planning against the design rating for all IT equipment, e.g
- Blade Chassis, actual power draw versus plate reading

"In order to improve the energy efficiency of data centre's, it is first necessary to measure the energy consumption of the entire data centre and each of its constituent subsystems." Green Grid

What you should help your customers focus on?

Implement Real Time Metering
Goal: Determine how much electricity each server in a rack is using 7x24x365
Solution: Implement metering on a per outlet basis
Benefits:
- Improve energy efficient operations
- High light spare rack power capacity
- Obtain accurate information to allow accurate informed decision making.
- Enable integration with DCIM tools

Introduce switching capability
Goal: Permit rack equipment to be remotely turned on/off by approved users.
Solution: Implement per-outlet switching capable rack PDU's
Benefits:
- Manage on/off power remotely
- Enable sequential power on/off
- Improve data centre power policy

Increase data centre temperature
Goal: Increase rack inlet air temperature to reduce energy costs.
Solution: Implement rack equipment that has been rated to run at higher temperatures (think of where rack PDUs sit!)
Benefits:
- Following ASHRAE's recommendation of running inlet air temperature at 27°C reduces energy consumption (increase of 1°C brings energy savings of upto 4%)
- Allows deployment of higher density equipment reducing floor space.

Eliminate thermal irregularities.
Goal: Monitor temperature and humidity to prevent environmental problems in racks and containment systems.
Solution: Implement sensors to detect environmental variables and report to a centralised DCIM or energy management platform.
Benefits:
- Avoid over cooling and stay within ASHRAE guidelines
- Eliminate hot spots
- Proactive monitoring to get advanced warning of potential issues vs adhoc monitoring

Have a plan for dealing with equipment failure.
Goal: Nobody can guarantee against equipment failure, however, if & when it does, have a plan to minimise impact (acknowledge all IT equipment can fail, including PDU's)
Solution: List maintainability to your list of criteria when selecting products and solutions for your data centre, e.g. True hot swap NMC for onsite replacement.
Benefits:
- Improve MTTR.
- Achieve higher network availability

Organisations that trusts Server Technology

Just some of the companies who rely on Server Technology

Thomson Reuters	Facebook	Google	Apple	AT&T
Wells Fargo	Linkedin	Yahoo	EMC	BT
Bank of America	Twitter	Expedia	Netapp	Verizon
Westpac	Myspace	Amazon	Juniper	Nortel

Organisations demanding high quality, reliable solutions to maintain service availability

Server Technology's value proposition

QUALITY	RELIABILITY	ACCURACY
Highest quality parts used (e.g. 60°C rated PDUs) Meticulous building of each individual component	Exhaustive tests carried out on each individual PDU undertaken Multi-point checks made throughout build to assess dependability of unit when in use	<1% (Billing Grade) measurement accuracy in each smart PDU When data is collected, this ensures optimisation of Data Centre power availability

Server Technology's value proposition

Centralised Management Software

Sentry Power Manager

Measure power being consumed by each PDU

- Group in to logical order
  - Application
  - Row
  - Data Centre

Monitor any changes in the Power consumption

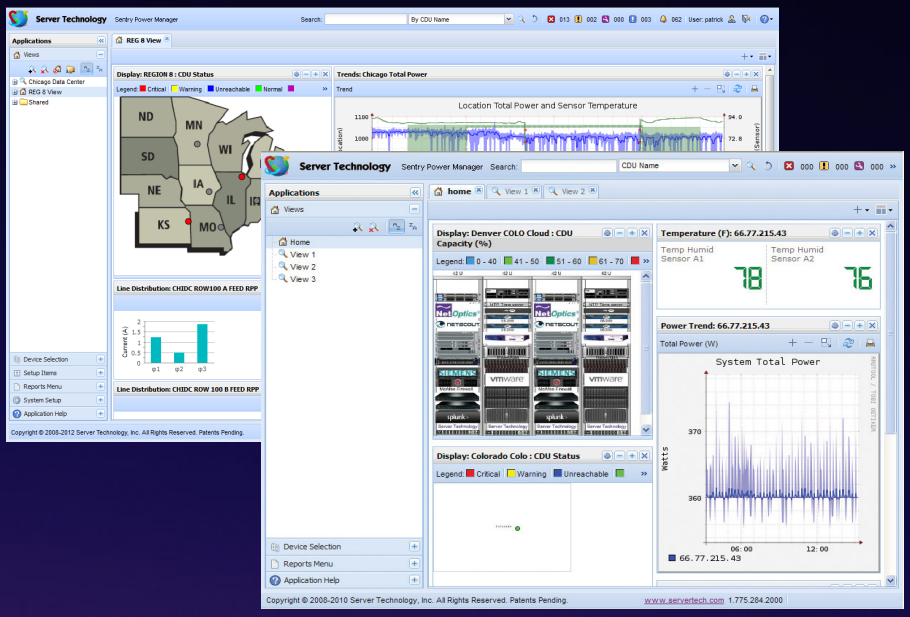
- Trigger alerts to send off automatic emails
- Trap the alert to begin a 'support ticket' to identify and resolve the problem quickly

Manage the complete Power Infrastructure

- Single repository for all IP Addresses for the PDU's, including Rack/Data Centre locations
- Simple integration to external password authentication systems make user access easy
- Execute bulk updates to all PDU's in a Data Centre from one location

Report on the condition of the Data Centre

- Over 25 canned reports available
- Power Trending analysis included in SPM
- Simple export to industry standard files to simplify data manipulation



Quick Facts

Ideal from 5 Racks to global deployments

Available as a Virtual Application or turnkey Hardware appliance

Extremely low cost of ownership

Very fast ROI

Manage AC and DC Environments (Unique to industry)

Customer Challenges & Our Solutions

Infrastructure Manager		Network Administrator		Data Centre Manager		Chief Executive / Finance Officer	
Challenge	**Solution**	**Challenge**	**Solution**	**Challenge**	**Solution**	**Challenge**	**Solution**
Bring more power to each cabinet	Powerful 3ph PDU	Uptime	Switched PDU	Efficiency	PUE Reporting	Cost Control	Indepth Reporting
Capacity Planning	Metering	Remote control of devices	Thresholds + Alerts	Stability	Scalable Solution	Regulatory Requirements	Green Agenda
Phase balance	Thresholds + Alerts	Security	Secure protocols		Flexible options	Public Perceptions	Responsible energy management

Who to Target

Data Center's

Internal
External
Colocation

Remote Locations

Branch Offices
Network Closets
Kiosks
Surveillance Systems
University Campuses

Labs

Corporate Research Centers
Equipment Validation and Testing
Engineering Labs

Telco's

Switches and Routers
Terminals and Consoles