Delivering total power infrastructures worldwide for IBM

Agenda

- Who is Powerware?
- Customized Solutions for IBM
- Full range of single-phase UPS
- Full range of three-phase UPS
- HotSync paralleling technology
- Software and Connectivity
- World-class Service
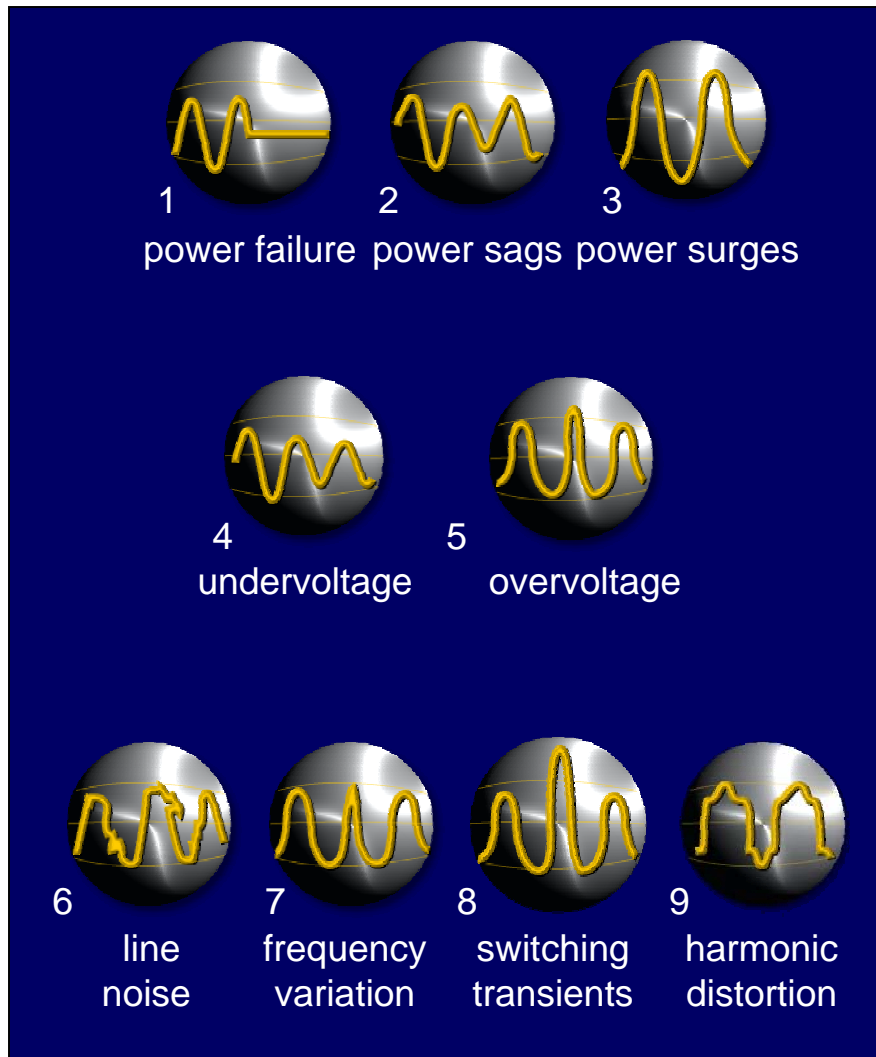- Summary

Who is Powerware?

- Powerware is an industry leader and globally recognized provider of innovative, effective power quality solutions

- Powerware boasts almost 20 years of strategic OEM partnership with IBM in providing custom-designed and off-the-shelf UPSs and power management solutions

Power Protection
as Easy as…3,5,9

E·T·N | **Powerware**

1 power failure 2 power sags 3 power surges

4 undervoltage 5 overvoltage

6 line noise 7 frequency variation 8 switching transients 9 harmonic distortion

Powerware Series 3

Protects against at least 3 of the
9 power problems
Single-phase, Offline
desktop, LANs, PBXs

Powerware Series 5

Protects against at least 5 of the
9 power problems
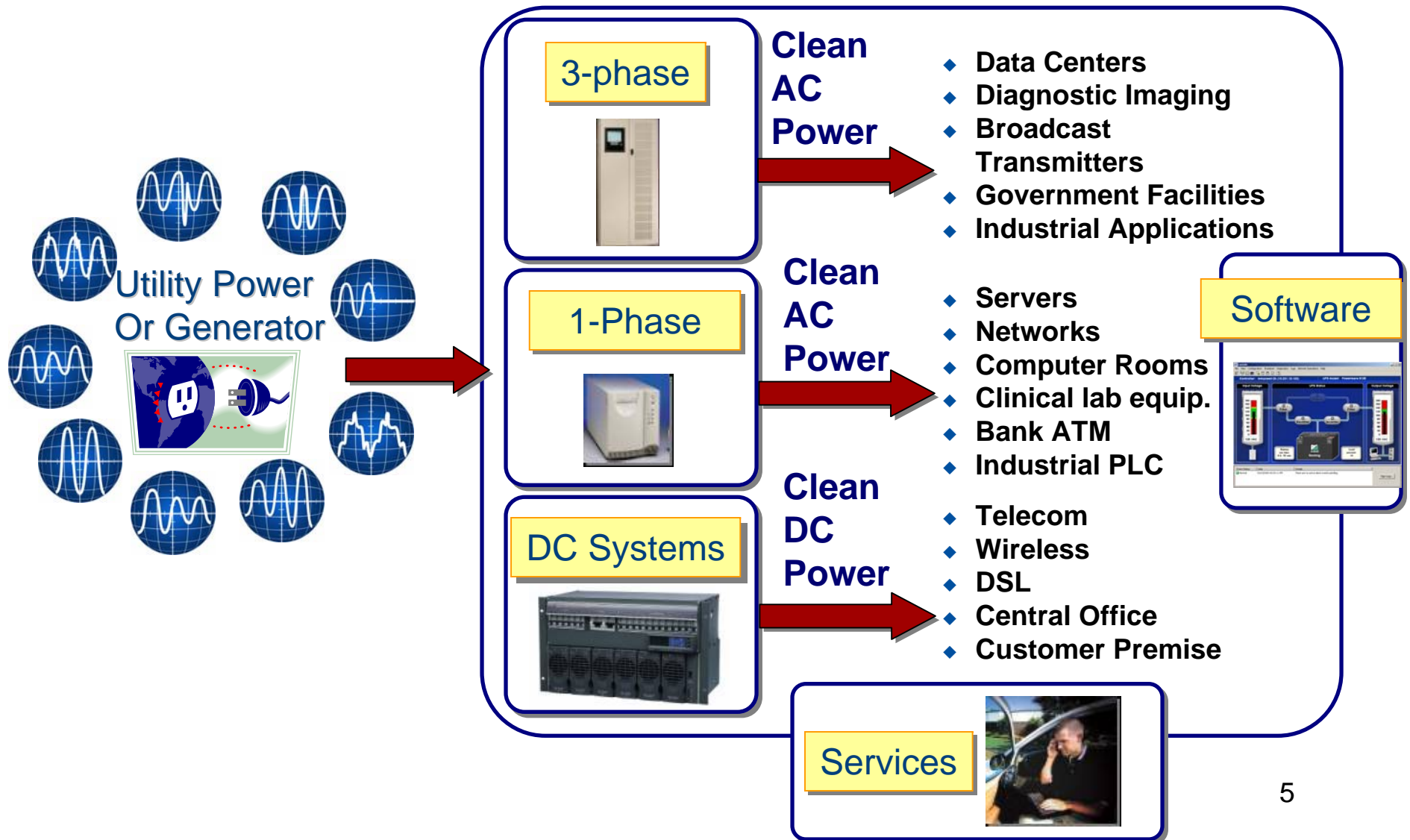Single-phase, Line-Interactive
LANs, PBXs, server farms

Powerware Series 9

Protects against all 9 power problems
Single-phase, Online and
Three-phase, Online
server farms, data centers,
switching centers

Powerware Offering

EAT•N | Powerware

Utility Power Or Generator

3-phase

Clean AC Power
- Data Centers
- Diagnostic Imaging
- Broadcast Transmitters
- Government Facilities
- Industrial Applications

1-Phase

Clean AC Power
- Servers
- Networks
- Computer Rooms
- Clinical lab equip.
- Bank ATM
- Industrial PLC

DC Systems

Clean DC Power
- Telecom
- Wireless
- DSL
- Central Office
- Customer Premise

Software

Services

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Customized Solutions for IBM

9910 UPSs

- Pre-architected, tested and optimised for eServer and TotalStorage applications

Power Distribution Units

- Extremely scalable

- Speeds installation and reduces cabling complexities

What Sets Powerware Apart?

- Powerware UPSs feature higher power density at any comparable VA rating

- ABM® technology doubles battery service life

- Load Segment control allows individual shutdown and startup schedules to preserve battery power for the most critical applications

- Remaining battery runtime guaranteed through LanSafe

- Originator of SNMP Web technology currently offering 4th generation products vs. competitor's 1st and 2nd generation offering

Full Range of Single-Phase UPS

- 300 VA to 18 kVA UPSs to protect sensitive electronic equipment from a desktop to vast data centers

- Wide range of stealth black UPSs to match IBM systems

- Advanced Battery Management (ABM®) technology doubles battery service life

- Extended battery modules prolong backup time and ensure uptime

- Load segment control

Full Range of Single-phase UPS

EAT•N | **Powerware**

3110	5115	5125	9120	9125	9170+
300 to 700 VA	500 to 1400 VA	1000 to 2000 VA	700 to 3000 VA	700 to 3000 VA	N+X power and logic redundany 3 to 18 kVA

3115	5115RM	5125	P33 / P11/P16	9125	
300 to 650 VA	1U height 500 to 1400 VA	2-in-1 form factor 1000 to 3000 VA		5000 and 6000 VA	

◄─────── Single Module ───────►   ◄ N+1/2 ►

Modular Powerware 9170+

- Scalable battery and power module configuration allow UPS to adapt to changing IT environment

- Each 3 kVA power module contains its own logic (unlike competitive systems that separate cards), allowing true N+X power and logic redundancy

- If a power module is removed from service or fails, the remaining module(s) immediately provide power and share the load

- Increase battery runtime by adding internal battery modules to base UPS cabinet or adding al battery cabinet

- Hot-swappable batteries minimize downtime
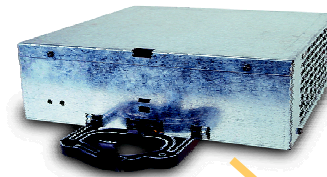
9170+ as seen in mobile centre

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Full Range of Three-Phase UPS

- 10 kVA to over 4000 kVA

- Unique Hot Sync® paralleling system provides redundancy and capacity capability with system availability of 99.9999% and greater

- N+1 redundancy delivers unmatched reliability

- Extended battery runtime options ensure uptime

- Complete power train solutions from a single source

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Full Range of Three-phase UPS

EAT•N | **Powerware**
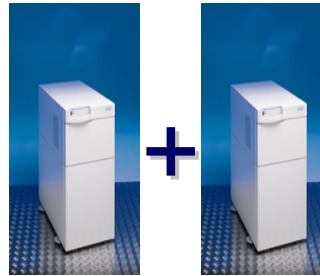
9150	9305	9305	9305	9340+9305 + 9370
1ph / 1ph	3ph / 3ph	3ph / 3ph	**Parallel Redundancy**	**Parallel Capacity Hot-Sync (up to 4 modules)**
8kVA	7.5kVA	20kVA	3ph / 3ph	3ph / 3ph
10kVA	10kVA	30kVA	7.5kVA	20kVA
12kVA	12kVA	40kVA	10kVA	30kVA
	15kVA	50kVA	12kVA	40kVA
9150		60kVA	15kVA	50kVA
3ph / 1ph				60kVA
8kVA				
10kVA				
12kVA				
15kVA				

Single Module ➡   ⬅ **Multi-Module** ➡

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Powerware Hot Sync®
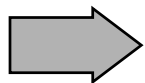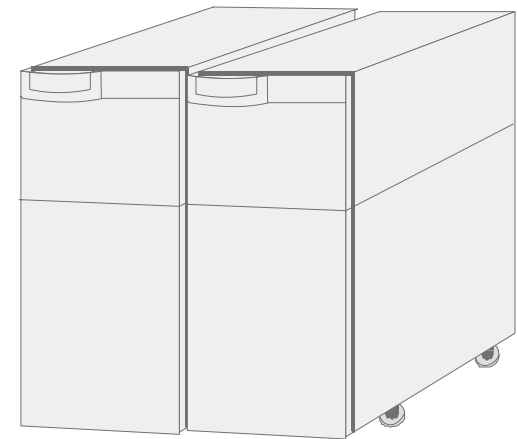
- Unmatched system for paralleling 2 UPSs for redundancy
- The most reliable UPS topology in the world
  - Reliable operation w/o control wirings between UPS modules
  - No Single point failure
 - Automatic load share routine
- Patented Controlling system

➡ **Extremely high reliability**

Parallel Configuration

- Up to a maximum of 8 units parallelable
  - not necessary for all units to be of the same kVA rating
- Control and regulation of the inverters by only one additional pcb in each unit
- Paralleling of any number of bypasses is inherent within the control
- The units share the load at all times
- Every unit is identical, all control is completely independent of the other units
- No single-point failure

Software and Connectivity
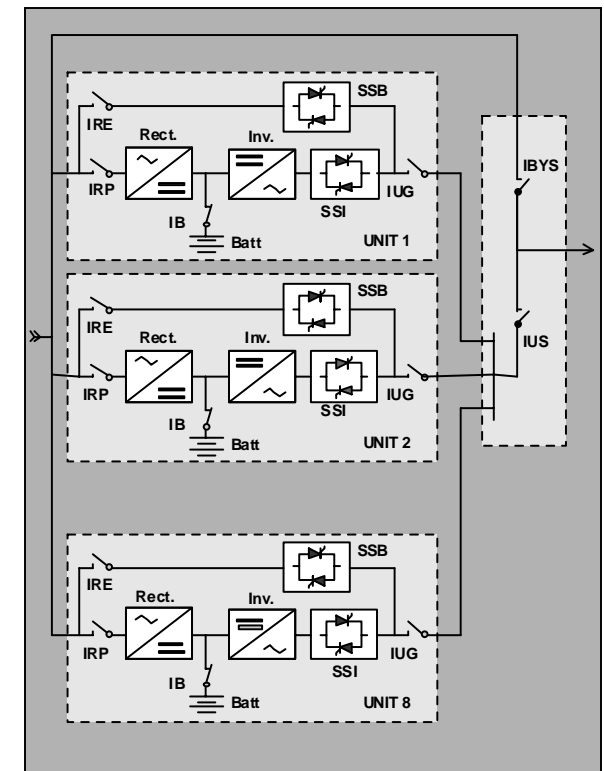
- **Software:**

  - LanSafe for network shutdown and power management

  - Powervision for enterprise-wide UPS monitoring and data analysis

  - DataTrax Foreseer for proactive management of power, environmental, and life/safety systems
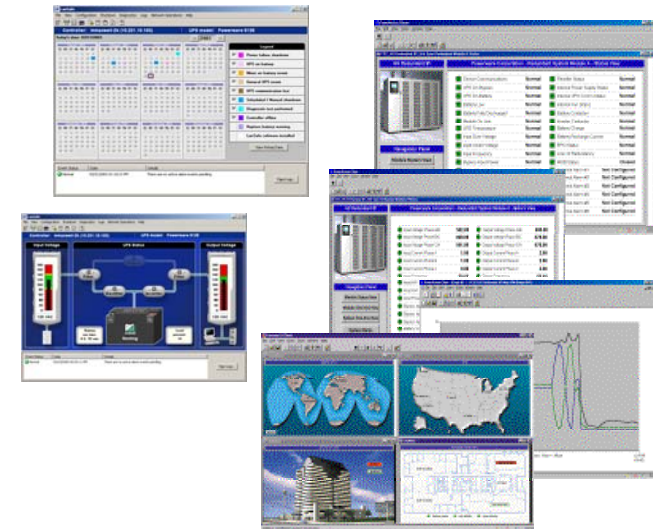
- **Connectivity products:**

  - Web/SNMP card for integration into the network, Internet, and SNMP management systems

  - Modbus card for integration with building management systems

  - Modem and MultiServer cards for special applications and out-of-band communications

  - Serial, USB, and Relay cards for basic and advance computer connections'

  - Expansion chassis provides a dynamic extension method

Extensions for IBM Director

- **Seamless UPS and software integration into IBM Director Network**

- **Real time monitoring, management and alarm notification of all UPSs in the network: e.g. battery status, battery replacement, load level and metering information**

- **Automatically launches LanSafe and ConnectUPS Web/SNMP Card applications from within Director**

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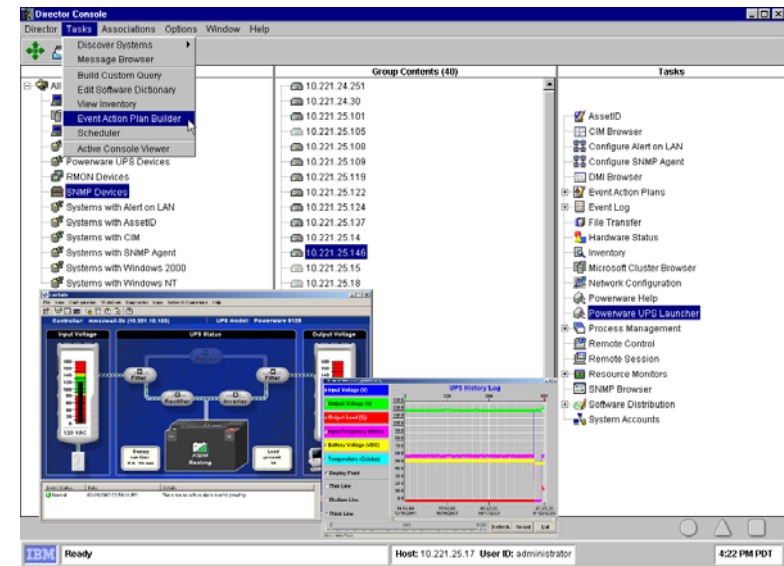
Software and Connectivity

Solution	zSeries	iSeries	pSeries	xSeries	Storage	Networking
LanSafe software			√	√		
LanSafe software & ConnectUPS MultiServer card			√	√		
NetWatch software & ConnectUPS Web/SNMMP card	√		√	√	√	√
IBM Director Snap-in				√	√	√
PowerVision software	√		√	√	√	√
FORESEER software	√		√	√	√	√
ConnectUPS relay card &AS/400 cable		√				

World-Class Service

- ## Equipment serviced
  - UPS, DC, batteries and ancillary equipment

- ## System Integration
  - Design, engineering, installation and project management

- ## Global Services Infrastructure
  - 24x7 Service Operations and Call Center

Summary

Place your confidence in Powerware

- a long history of technology leadership to give you the best protection

- the most complete line of hardware and software products to fit your needs

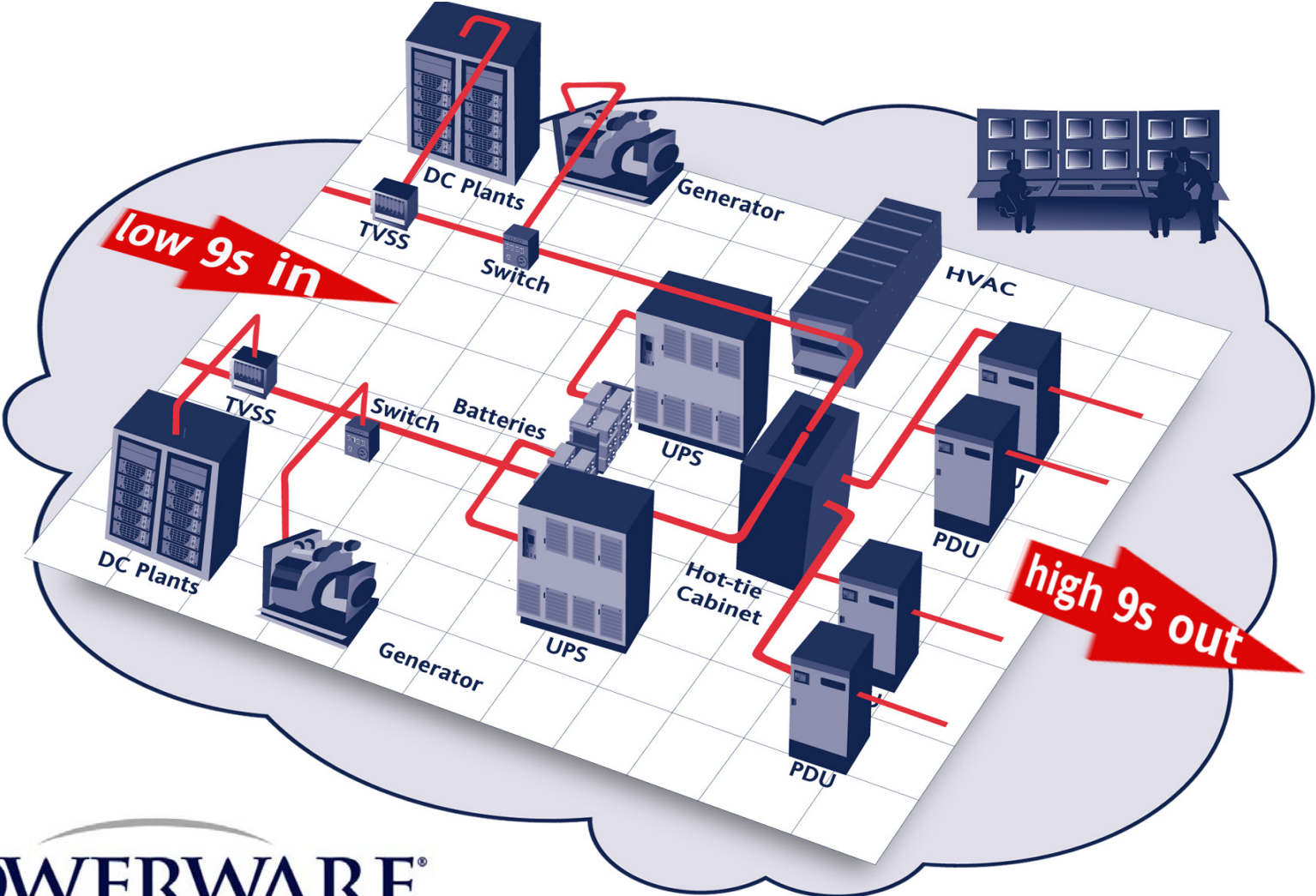- a world-class services organization to provide you the peace of mind

Powerware Resources

Powerware UPS Hotline for IBM

Tel: +44 (0) 845 177 3410

Email: IBM.UPS@powerware.com

Website: www.powerware.com/ibm

Powerware delivers availability in the high-9's