



Future-Proofing the Cities of Tomorrow:

Vertiv In E-Governance

MOVING TOWARDS A SMARTER CITY



Growing Criticality of Smart Cities

- Smart cities is fast becoming one of the world's most critical industries as more nations invest in technologies to improve the delivery of government services
- IDC estimates that spending for technologies that enable smart cities will grow to \$135 billion in 2021. This includes investment in sensors, infrastructure to support big data, and other technologies.
- Technology disruptions will impact transportation, law enforcement, and public safety, among others with greater focus on customer experience

The Rise of the No-Collar Workforce

- As technology adoption of big data, cloud computing and Internet of Things (IoT) matures, governments will turn to Artificial Intelligence (AI) and analytics in their technology initiatives.
- These trends will enable the no-collar workforce – the increased use of cognitive assets, bots and other technologies to support the existing workforce.
- Instead of replacing people, technology will augment the existing labor force in the drive to become a sustainable, hyper-connected society.

Security is Paramount

- With increasing reliance on IT, spotlight will now turn to ensuring the integrity and security of personal data that's being collected by different government agencies
- Investments on hardware and software protection against cybercrimes will become a priority
- Governments must rethink their strategy to include data sovereignty and protection as among their e-governance initiatives

INFRASTRUCTURE CHALLENGES



An agile core

- With increased reliance on IT, high density computing could become a concern. Governments need a strong IT backbone that provides agility, productivity and efficiency to government operations.
- Consolidation simplifies government operations through cross-agency platforms, eliminating operational redundancies.
- A robust data center is also needed to support the increasing use of online applications to connect citizens and businesses.
- What is required is an agile, flexible solution that includes power and cooling, as well as industry best practices to support a high density computing environment.



Strengthening the government edge IT

- A 'smart' city requires a 'smart' infrastructure that can support and manage multiple IT requirements from different high density environments. A traditional brick-and-mortar approach may no longer be enough
- Managing multiple, disparate IT infrastructure can be a challenge across different government agencies. Making sure that these are in sync and communicating effectively across different locations is paramount.
- These agencies and sub-agencies would have varying levels of criticality, but would have the need for reliability and availability for their stakeholders as a common ground.
- Seamless communication between core and edge assets is critical. This requires higher level of availability and intelligent monitoring capabilities. Availability at the core should be at par with the edge.
- Ensuring network connectivity from core to edge is also vital as any minute of downtime can have negative results to all stakeholders. Reduced latency, speed and flexibility are needed for fast delivery of services regardless of location.



Redundancy and disaster recovery

- In the event of disasters, government agencies must have ready infrastructure in place to ensure that services go on unhampered and citizens have access to services they need.
- A rugged back-up infrastructure is needed that is equipped with efficient solutions that can ensure business continuity.
- A prefabricated, integrated modular solution that contains racks, power, thermal, and monitoring is ideal as a back-up, disaster recovery solution.



Visibility and security

- Data security is a major concern at all aspects of governance
- Not only should infrastructure be designed to support critical operations, it must have robust monitoring and management framework for secure operations, intelligent notifications and alerts to enable immediate action in case of emergencies.
- At the same time, access to timely data is also critical for government operations.

VERTIV CORE TO EDGE SOLUTIONS



SmartAisle™

- Pre-configured, rapidly deployable integrated IT infrastructure for core deployments
- Replaces traditional bricks-and-mortar design with flexible, efficient solutions
- Fully integrated with Liebert APM UPS, CRV+ Thermal Management and RDU monitoring solutions



Liebert® APM

(18 to 90kW, 30 to 300kW, 400 to 600kW)

- Offers up to 96% efficiency in true online double conversion mode
- FlexPower Technology offers redundancy, matching the capacity of protected equipment
- Compact, space-saving design with integrated batteries



Liebert® CRV+

- Compact design allows cooling to be delivered closer to heat source
- EC fan allows energy savings of up to 30%



Vertiv™ Site Manager

Tracks and reports on the health of facility-critical devices and provides information on power, cooling and environmental conditions, such as temperature, humidity, airflow and fluid leaks.

Vertiv™ Power Insight

Vertiv™ Power Insight helps to maximize the investment you have already made in your Liebert UPSs and can help to lower support costs as well as protect your valuable critical equipment.



SmartRow™ 2

- Efficient Cooling Architecture
- Demand-Driven Deployment
- Intelligent Monitoring and Management System
- Accessibility, Management & Secure



Liebert® RDU-A G2

- Insight into environmental conditions i.e. Temperature, humidity, smoke, leak and vibrations
- Capable of monitoring infrastructure appliances such as UPS, cooling, gensets, etc.



SmartCabinet™

- Integrated, pre-configured infrastructure that brings “plug-and-play” convenience to small spaces and edge locations
- Offers high efficiency and availability with the Liebert ITA2 UPS and integrated Thermal Management solution
- Comes with intelligent monitoring capabilities through the Liebert RDU software



Liebert® ITA2

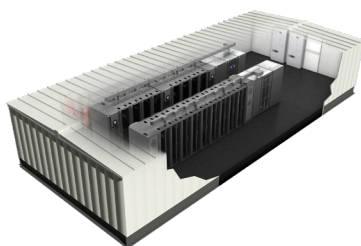
(5 - 20kVA)

Compact, Efficient & Robust UPS For Critical Applications



eCap Optimization

Reduce energy consumption through strategic power and cooling optimization in the data center.



Integrated Modular Solutions

- Prefabricated data centers that offer high availability, flexibility and efficiency
- Ideal for remote deployments, disaster recovery sites or back-up locations
- Simplified, standardized designs reduces build time compared to traditional approach

LIFE Remote Diagnostic and Preventive Monitoring Services

Vertiv's remote service delivery is enabled by LIFE™, which provides remote diagnostics and preventive monitoring service for UPS and thermal management equipment.



Avocent® ADX

The Vertiv™ Avocent® ADX Ecosystem is built upon a secure common architecture which seamlessly integrate and scale to create an open yet resilient IT management platform – from Enterprise to Edge configurations.



Avocent® ACS6000

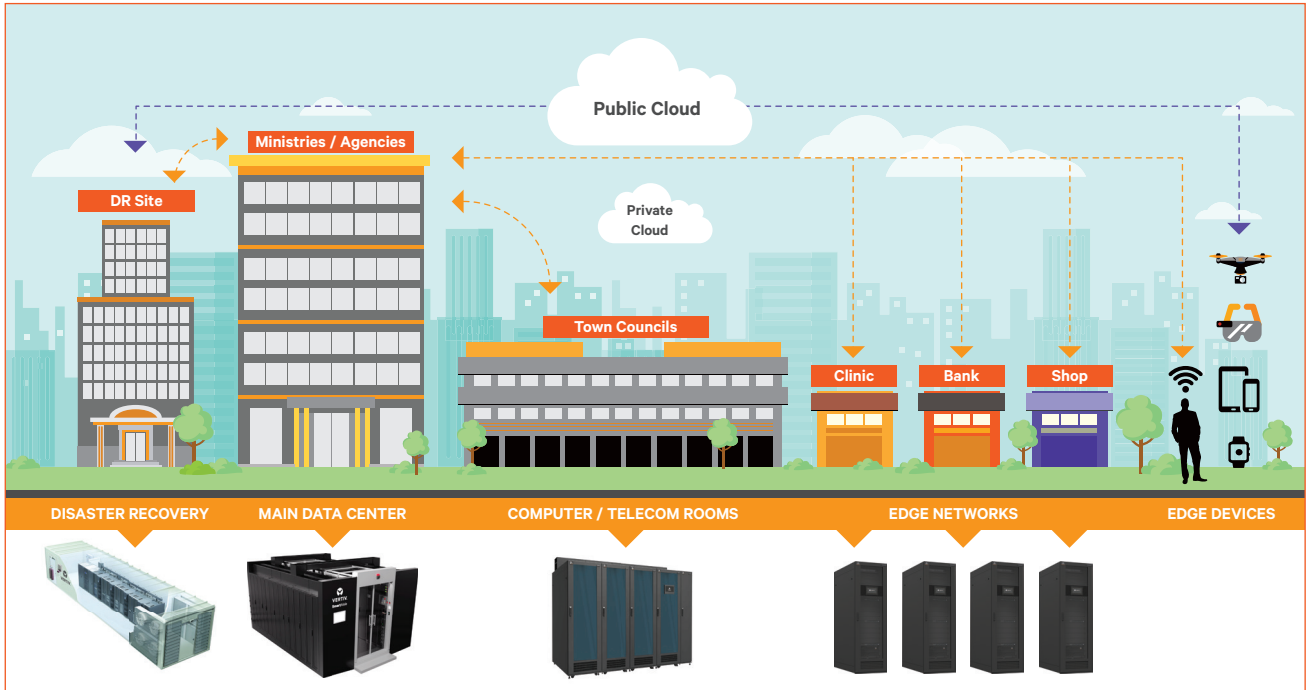
The ACS 6000 console server series integrates advanced technologies, adaptive services and secure enterprise communications for high-end, large, enterprise data centers.



Avocent® HMX High Performance KVM

Desktop over IP solutions are designed for desktop administrators who need to physically separate the computer from the user in the work environment. Physical separation of computer and user provides solutions where security and/or environmental issues are major concerns.

VERTIV END-TO-END CRITICAL INFRASTRUCTURE



SYARIKAT AIR DARUL AMAN (SADA) SDN. BHD. MALAYSIA



Overview

SADA wanted to build a new data centre which will be housed in its new building in Alor Setar. However, the data centre room was not very spacious, thus the customer needed a solution with a small footprint but powerful to support its IT requirements throughout the region.

Vertiv Solution

- SmartRow™ Plus

REDLAND CITY COUNCIL (AUSTRALIA)



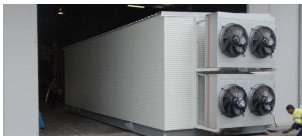
Overview

The Council's primary and secondary data centres were approaching the end of their useful life. They weren't tier-rated and were increasingly inefficient and expensive to run.

Vertiv Solution

- Integrated Modular Solution
- Liebert® CRV
- Liebert® APM UPS
- Liebert® MPH2 Intelligent PDU
- S-Series Racks
- Generator

ISAAC REGIONAL COUNCIL (AUSTRALIA)



Overview

The Council's current data center was no longer suitable to handle the customer's increasing capacity demands. It wanted to transfer its critical IT equipment into a more secure facility, and thus the Council opted to have a standalone modular data center instead which could be deployable in a short period of time and would be situated within the Council's head office located in a secure facility.

Vertiv Solution

- Liebert® ITA
- Knürr E-Series Racks
- Liebert® CRV 35 kW
- ASCO® 7000 Series Closed Transition Switch
- TVSS
- PDU
- Generators

GOVERNMENT AGENCY IN VIETNAM



Overview

The agency needed to protect its servers and boost equipment reliability. It wanted to refresh its current power and cooling infrastructure to handle the influx of planned future activities.

Vertiv Solution

- Liebert® NXr
- TVSS
- Liebert® CRV
- SiteScan

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