DELL Technologies

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Green and Sustainable Customer Ready Solutions

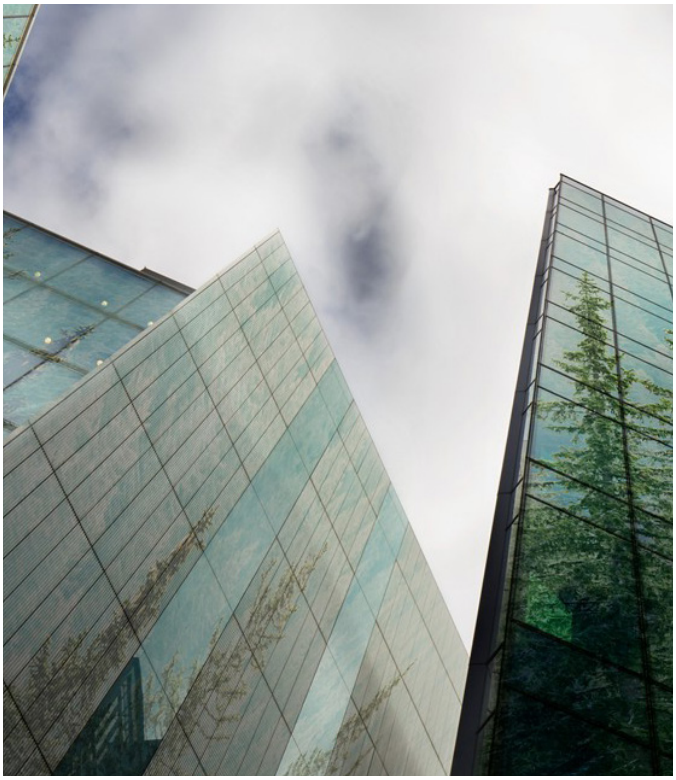
Cities are growing with rapid urbanization and facing unprecedented challenges in meeting Green and Sustainability goals. Dell Technologies Green and Sustainable Customer Ready Solutions are highly scalable pre-validated ISV partner solutions designed on purpose-built Dell Technologies Infrastructure Solutions to deliver cost effective solutions to address these challenges.

Building for Humanity's Urban Future

Cities have always been at the forefront of innovation and human progress. Today, two powerful forces are propelling humanity to the next chapter in our urban story.

On one hand, city populations are rising both in absolute terms and as a proportion of global population. UN figures predict that by 2050 some 6.7 billion people – 68% of humanity – will live in cities. On the other hand, cities are constrained by limited infrastructure and resources.

Today's preparation for this growth will define how tomorrow's cities meet its challenge. From health, transport and housing to education, security, waste management, culture and tourism, every facet of urban life will have to operate at a scale greater than ever before.



The Role of Digital Cities

Maintaining and improving citizens' quality of life in the megacities of tomorrow needs a fresh approach. A key challenge in developing digital cities is to ensure access to stable, green, and inexpensive energy for all purposes – transportation, heating, and commercial use. At Dell Technologies, we are pioneering solutions to empower cities to thrive in the next phase of their evolution.

Our vision of Digital Cities – built on foundations of robust technology and flexible IT infrastructures that provide essential services from a common platform.

Apart from realizing a wide range of benefits around citizen safety, health and other parameters, digital city solutions can also influence a positive impact to the sustainable and environmental impact in cities. Use cases like real-time air quality monitoring, real-time tracking and optimization of resources like water and electricity and smart waste management can help reduce greenhouse emissions as well as help save precious natural resources.

Green and Sustainable Challenges

Global warming and the environmental problems arising from it are posing a serious threat to the peaceful co-existence of the human and the natural worlds. This has made it imperative that we find efficient and alternative ways of development and sustainability that can support existing and upcoming cities with optimized usage and management of scarce resources.

Population and economic growth along with rapid urbanization drive a massive demand for buildings wherein two thirds of the structures that will exist by the year 2030 are yet to be built. On average, buildings within a city can consume about 40% of a city's total energy and therefore have significant potential for energy savings with a wide range of options. With Internet of Things devices and smart sensor technology becoming more common and available, this offers planners a great opportunity to make cities green and sustainable. As the cities expand with more infrastructure, the corresponding impact on environmental characteristics like air quality, noise pollution, etc. needs to be thoroughly understood and factored in as part of the planning.

Smart Buildings are essential building blocks of Smart Cities. A Smart City is an aggregation of smart buildings, campuses, and other real-estate entities. Certainly, Smart Building solutions address the need for automation, but building intelligence extends well beyond the simple automation and focuses on how the technology is used and managed. The modern smart building connects and integrates heterogeneous sensors and systems and usage information into a central view not only to reduce energy consumption and costs in the use of resources such as heating/cooling, electricity, water, and other utilities, but also to foster safety and security, comfort, well-being and health of the citizens.

In this holistic approach, sensors and systems originally developed for other purposes, can effectively contribute to the development of an intelligent building that is able to generate data and share it among systems to enhance the efficiency and effectiveness of the whole smart city.

Dell Technologies Customer Ready Solutions for Green and Sustainable

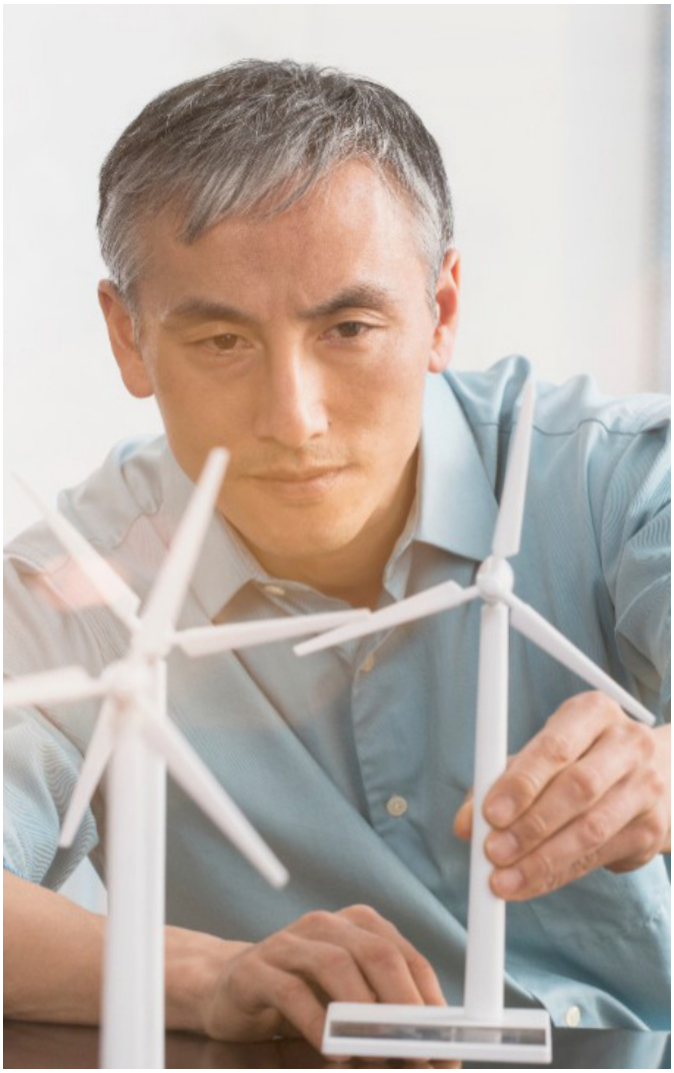
Dell Technologies' Green and Sustainable Customer Ready Solutions give civic government, business, and public institutions clear, cost-effective pre-validated paths to transition to modern infrastructure.

Green and Sustainable Customer Ready Solutions offer:

- Pre-integrated, pre-tested, lab-validated solutions for use with your own data, choice of devices, sensors, software (e.g., analytics) and services.
- Built around a modular approach that addresses public safety solutions' unique requirements in storage, analytics, and situational awareness.
- Solutions that are ready to deploy and manage quickly, delivering advanced civic safety capabilities efficiently, predictably and within clearly defined budgets.
- A flexible, open architecture that is massively scalable and ready to adapt to changing demands.
- Proven use cases for digital public safety including video analytics and situational awareness

Proven use cases for smart buildings and sustainable including:

- Real-time tracking of building energy consumption (HVAC, water, etc.)
- Fault monitoring and bidirectional control of assets.
- Building occupancy measurement and tenant satisfaction tracking.
- Condition based predictive maintenance and work order management.
- Simulation of environmental impact of new infrastructure build up on air quality and noise.



Green and Sustainable Outcomes

The Dell Technologies' Customer Ready Solutions for Green and Sustainable solutions can help cities realize a range of outcomes under various categories, like the following:

- Integrated Building Management Solutions
- Increased Utility efficiencies for Buildings (Water, Air-Conditioning, Electricity)
- Real-Time changes for cost savings
- Space Optimization – parking, office space
- Increased tenant/occupant satisfaction
- Contribute towards Green Certifications
- More efficient city planning through environmental impact simulations

By Combining these outcomes from smart buildings and smart energy management with other solutions like smart grid, environmental monitoring, smart waste management etc. and also increasing their adoption, cities can help achieve a tremendous improvement in the environmental parameters as well as contribute towards a greener and sustainable future.

Dell Technologies Advantage

Dell Technologies is a unique family of businesses that provides the essential infrastructure for organizations to build their digital future, transform IT and protect their most important asset: information.

With Dell Technologies, customers can have a one-point contact for lab-validated components, domain expertise, and integration capabilities instead of having to work with multiple vendors to achieve end-to-end goals.

	DO IT YOURSELF	DO IT WITH DELL TECHNOLOGIES READY SOLUTIONS
Smart Building Soln iBMS Impact Simulation Compute Storage Backup/Recovery	↑ INTEGRATION ↓ By having multiple vendors, cost, schedule, and performance are likely to take hit – as it costs more to purchase separate service packages, has higher complexity when it comes to scheduling implementation and product upgrades, and gives less-than-ideal performance from a non-integrated, non-pre-validated solution.	Dell Technologies

* with partner ecosystem

Dell Technologies also has a wide infrastructure portfolio including the industry-leading compute and storage platforms

STORAGE	SERVER	DATA PROTECT.	CONVERGED	HYPERCONVERGED
 PowerMax	 PowerEdge	 PowerEdge DD	 VxBlock	 PowerFlex Inegrated System
 PowerStore	 PowerEdge MX	 PowerProtect Recovery Solution		
 PowerScale	 PowerEdge 940xa	 PowerProtect DP		 VxRail
 PowerFlex				
CLIENT		DATA & APPS	CLOUD	SERVICES

Conclusion

- Dell Technologies Green and Sustainable Customer Ready Solutions are enabled by Dell Technologies Infrastructure for Compute, Storage and Networking resources. These hyper-converged solutions are purpose-built for demanding, multi-sense situational awareness, such as video, sound, and barometric pressure. The IoT solutions include both hardware and software.
- Our pre-integrated solutions deliver a consistent foundation from Edge to distributed core, to the cloud in an open, flexible architecture.
- By pre-integrating, testing, and validating solutions in our labs, we help reduce deployment risk, increase system reliability, reduce support costs, and gain a proven, repeatable architecture.
- Our Ready Solution architectures also provide a flexible, scalable infrastructure on which to build future smart cities initiatives. At a time of rapid urban growth, this facilitates faster technological uptake and maximizes return on civic resources.

ACCELERATING DIGITAL CITIES OF THE FUTURE

Click here to visit
Dell.com/Digital Cities today!

Questions?
We're here to help.

From offering expert advice to solving complex problems, we've got you covered.

Call
1-800-433-2392

Get Support