



HPE SIMPLIVITY HELPS KINGSWAY HOSPITALS OFFER 24X7 WORLD-CLASS MEDICAL CARE

Objective

Set up failsafe, hyperconverged infrastructure (HCI) and medical imaging storage system for a brand-new hospital offering affordable healthcare

Approach

Implement HPE SimpliVity along with a flash-ready, shared HPE MSA SAN Storage to host hospital information management system (HIMS) and picture archiving and communication system (PACS) on separate servers, for a software-driven approach to simplify and automate IT

IT matters

- Separate offering for HIMS and PACS
- Ease of management with a VMware vCenter® plugin
- Zero RPO and faster restore of one minute/TB for failed VMs
- All SSD solution for client HIMS for faster billing and reduced wait time
- Backup included as part of the HPE SimpliVity solution
- End-to-end solution from HPE for data center components including storage units

Business matters

- Accelerates IT responsiveness to meet the needs of clinicians
- Enables Kingsway Hospitals to handle ongoing growth of digitized medical data
- Helps assure patients of receiving a positive healthcare experience
- Enhances disaster recovery with a virtual, optimized environment
- Enables access to data, in a faster, easier, and more reliable manner
- Facilitates future business growth with ease of expansion and scalable solution

Key figures

- Consolidating server space has helped save power consumption and rack space by over 70% as compared with the traditional approach
- Guaranteed zero-minute RPO, 600 to 700-second RTO
- Guaranteed savings on storage versus traditional systems, including backup



By adopting the HPE SimpliVity HCI solution, a brand-new Indian hospital—Kingsway Hospitals—increased its disaster preparedness, agility, and efficiency. It also found an efficient, innovative, and integrated solution to store terabytes of patient medical imaging data securely, to ensure the highest levels of confidentiality for patient data. This software-defined approach to delivering applications and services, via HIMS, now enables IT to respond with greater speed and efficiency to the needs of clinicians and their patients. Together, the HIMS and PACS solution is enabling Kingsway Hospitals to offer uninterrupted, smooth services to doctors and patients, with zero downtime and fast data access, reliably—now and in the future.



“We have created a fully integrated infrastructure for healthcare in central India, which is world-class. With choice of HPE SimpliVity, we have now a fully manageable and resilient compute platform. The adoption of HCI has enabled us to be future-ready. This also enables us to be prepared for commercial leverage in coming years. Vintech Team did a good job to deliver the required solution that would align our vision with technology.”

– CA Amit Somani, Managing Director Emerging Business, SMS Ltd. and Business Unit Head Kingsway Hospitals

**WHY KINGSWAY CHOSE
HPE SIMPLIVITY**

- Zero downtime, on-demand data access a reality
- Patient confidentiality, enhanced data security
- Availability of top-class workforce, support
- Minimal data center footprint



**UNINTERRUPTED
OPERATIONS CRITICAL
FOR 24X7 PATIENT CARE**

No matter where they are in the world, doctors, nurses, and hospital staff are truly on call 24x7 and few other professionals are called upon to work on cases with life or death implications, every day. Things can change in a matter of seconds when it comes to operating upon patients and the stakes are unimaginably high when a patient is wheeled into an operation theater or ER. While these professionals are no strangers to stress, there is a very real need for reliability and speed in their line of work, which extends to their IT infrastructure as well. Kingsway Hospitals was aware of all these factors as they set about building their first hospital in Nagpur, Central India.

Kingsway Hospitals is a unit of SPANV Medisearch Life Sciences PL, promoted by the SMS group. Led by eminent doctors from Nagpur, Kingsway has plans to grow its presence and establish a national and global footprint, over time. They set about creating a multispecialty healthcare facility in Nagpur with a vision to provide **affordable, quality healthcare facilities for every class of society**. A new hospital meant that hospital infrastructure and IT operations had to be built from the ground up.

**BUILDING THE HEART
OF A HOSPITAL: HMIS**

The world’s largest and best hospitals run on HMIS, which is a data collection system specifically designed to support planning, management, and decision making, in health facilities and organizations. HMIS works behind the scenes and impacts the lives of patients, doctors, clinical, and non-clinical staff. It facilitates the smooth functioning of a hospital, every single day in invisible ways. Kingsway Hospitals wanted to ensure that its HMIS would be optimized to perform tens of thousands of complex functions—efficiently, seamlessly, and lightning-fast. The customer required their HMIS to be robust and capable of heavy-duty performance but still light enough to run on slim computing devices, including desktop computers, laptops, and handheld devices.

At the same time, Kingsway was generating terabytes of image files in the form of patient data, including radiology reports, X Rays, MRI and ultrasound scans, and more. These pictures were archived using PACS—a medical imaging technology, which provides economical storage and convenient access to images from multiple source machine types. HMIS and PACS needed to function independently.





“HPE SimpliVity cluster block has till date proved to be a right decision for completing the IT jigsaw for our hospital. With restoration of 1 TB VM in just about a minute the RTO is phenomenal. With 90% capacity savings and more than 50% improvement in built-in data protection, as a CTO, I don’t have sleepless nights, anymore.

In today’s world, where digital needs are more immediate than ever, we needed a radically simple approach to the design of our IT environment. Intelligent, simple, hyperconverged infrastructure has saved us money during initial rollout at the edge and I am sure that when we deploy the nodes at remote sites the ease and experience will be similar. Thanks to HPE and Vintech Electronic Systems Private Limited and its dedicated and talented team of resources for deploying this solution seamlessly.”

– Umesh Deshpande, CTO, Kingsway Hospitals

HPE Partner, Vintech Electronic Systems Pvt. Ltd. understood the customer’s requirements, during a presales cycle extending over two months, before proposing a customized solution designed to meet Kingsway’s needs. Post a demo to offer a proof of concept and feasibility testing; HPE SimpliVity along with a flash-ready, shared HPE MSA SAN Storage was deployed as a holistic solution. This package won over other competitors because it was an all-flash solution capable of delivering high-speed performance even when the hospital was running at full capacity. Backups were accommodated within this plan with near-zero space requirement and instant recovery of data was guaranteed.

DESIGNING AND IMPLEMENTING AN INTEGRATED SOLUTION

Kingsway Hospitals wanted a solution with multiple servers and standalone storage for different applications. A modern, hyperconverged solution like HPE SimpliVity was chosen and the PACS server was hosted independently. The PACS server also doubled up as a VMware vCenter Server® and Arbitrator. The PACS server was connected directly to a SAN

storage of 48 TB capacity. PACS image data was stored and backed up separately keeping in mind the considerable size of images created every day. Currently, the SAN capacity is expected to meet the customer requirements for the next three years. Additional storage capacity can be created easily and economically, as hospital operations grow.

All other administrative and hospital applications such as Active Directory, HMIS, Purchase Software, FTP, and the Mobility Controller were running on three HPE SimpliVity virtual machine nodes, which fulfilled both the memory and compute requirements. Internal shared storage was used to store data for all virtualized applications. All HPE SimpliVity nodes, servers, and storage were interconnected using two 10 gigabit switches, which in turn were connected to the customer’s network.

This solution was implemented in a phased manner. HPE’s on-ground partner visited the site to assess technical readiness, before delivery of hardware. Next, upon delivery, all hardware was checked and mounted on racks and connected, before the HPE team installed HPE SimpliVity remotely, with the partner on standby. Finally, hardware installation and VM setup were complete before customer handover.



“We were keen on working with Kingsway Hospitals to enable them to fulfill their promise of offering affordable healthcare for all by providing a strong foundational IT architecture while allowing for future expansion and growth. We recommended that Kingsway Hospitals begin operations by building a nontraditional IT architecture, which would be modern, sleek, hyperconverged, and insured against data failure. Kingsway Hospitals was very keen on having robust, always-on data protection, making recovery easy and failsafe. We offered a mix of technology and product, and hosted a PACS server independently for storage-intensive medical imaging data. We recommended HPE SimpliVity as an all-in-one-platform that was centralized, intuitive, cost-effective, flexible, and disaster-proof.”

– Chandan Joshi, Director, Vintech Electronic Systems Pvt. Ltd., Pune

Here are some key customer considerations while choosing HPE SimpliVity:

1. Making zero downtime and on-demand data access a reality

Kingsway chose to integrate its entire HMIS with databases available across multiple virtual machines. Adequate redundancies were built within this system to ensure constant availability of data that remained in sync to prevent crippling data outages in the event of a system failure.

While most businesses seek to minimize disruptions to business caused by routine maintenance, a data breach or crash, as a hospital Kingsway was determined to achieve zero downtime. This requirement was made a priority while building the IT infrastructure from the ground up. Networking decisions from cabling, switching, and routing to computing and wireless access design were all directed toward ensuring that all components were concurrently maintainable, so operations could continue uninterrupted, 24x7. Services could be moved dynamically across servers, with no disruptions, and without the user experience being affected.

Medical history, test reports from past investigations would be accessible at all times, even during a scheduled server upgrade. Speed in accessing data was an important factor while choosing a solution, so that critical patient data—like an angiogram could be accessed readily during heart surgery. This is where the better IOPS rate of the HPE SimpliVity played a role and helped it win over the competition.

2. Enhanced data backup and disaster recovery

HPE SimpliVity's built-in data protection, replication, and disaster recovery features delivered results in 60 seconds or less on average for local backup to restore a 1 TB virtual machine (VM). The customer also relies on the snapshot backup feature to retrieve data that has been damaged or deleted accidentally. Data recovery is instant because RTO is zero with HPE SimpliVity.

3. Availability of highly skilled workforce, support

HPE SimpliVity has a large and recognized footprint in the area where the customer was present. The HPE Partner had built up a credible reputation with a roster of satisfied past customers within the region and the brand HPE carried a lot of value. The availability of certified highly skilled technical staff to offer presales support, install, and troubleshoot the solution post-deployment, was a big factor in favor of HPE, helping it win over competitors.

Post installation, trained personnel from Vintech Electronic Systems Pvt. Ltd. were on hand to offer customer support, as was the HPE direct team. The customer IT team at Kingsway received operational training in creating VMs and customer support was readily available, as the hospital ramps up operations. Competitive pricing of the HPE solution and the ease of management of this solution, with its centralized control and all-in-one dashboard, were other advantages that help HPE win this competitive bid.



“HPE SimpliVity provided a flexible, secure, software-defined, hyperconverged infrastructure to help Kingsway Hospitals offer world-class healthcare to patients, in a seamless, efficient manner. HPE SimpliVity offers superior performance, data protection to ensure patient data confidentiality, and disaster recovery. The policy-based VM-centric automated storage solution enabled Kingsway Hospitals to store terabytes of medical imaging data on a PACS server. HPE SimpliVity would help Kingsway Hospitals cut down long-term cost of ownership and data storage costs, while remaining agile and flexible enough to expand in the near future.”

– Joybrata Mukherjee, Director, Channels & Alliances, Hewlett Packard Enterprise, India

Customer at a glance

One of Nagpur’s newest hospitals is committed to offering the highest quality healthcare, at affordable rates to patients from all walks of life. Kingsway Hospitals has ambitious plans to grow into a hospital chain, with a national and global footprint.

HPE solution

HPE SimpliVity along with a flash-ready, shared HPE MSA SAN Storage was deployed as a holistic solution. Two key applications (HIMS and PACS) were run completely independent of each other, for superior performance.

Hardware

- HPE SimpliVity 380 Gen10
- [HPE ProLiant DL380 Gen10](#)
- HPE MSA SAN Storage
- Aruba Networking

Software

- Veeam Software for backup

4. Patient confidentiality and the need for enhanced data security

Confidentiality of medical data and demographics of patients posed a concern while architecting a storage solution. Care was taken to enhance data security, so no sensitive information was accessible on the public platform. Single-point control and management ensured that the highest levels of data security and privacy were maintained.

5. Reducing the data center footprint

Virtualization made it possible to use fewer physical servers and reduce the footprint of the data center. HPE SimpliVity takes up 12U rack space. This upgrade on traditional architecture helped Kingsway house critical applications in a sleek, modular configuration saving space and contributed to lower power consumption. These factors are expected to lead to better ROI and lower TCO for Kingsway in the end.

of surgeries and medical procedures will rise. IT operations need to scale up and keep pace with this growth. Kingsway Hospitals was, therefore, keen to build a strong foundation for its IT infrastructure and choose a storage solution that could be flexible enough to accommodate their changing needs as they work toward achieving full capacity. HPE SimpliVity allows the customer to dynamically create new virtual machines on the existing server stack, make modifications, manage patches, and upgrade capacity seamlessly. Building out and delivering new features in a modular manner was key to Kingsway’s growth, as a new hospital.

Digitizing business processes and moving away from a conventional network architecture toward a more sophisticated, dynamic, and sustainable solution has allowed Kingsway to become truly future-proof. HPE SimpliVity allows Kingsway to set ambitious goals and scale up their requirements in a flexible, modular manner to suit their expansion strategy, over the longer term.

MODULAR, FLEXIBLE, AND FUTURE-PROOF SOLUTION

The first year of operations is always critical for any new medical facility as it goes about establishing itself and building trust within the community. Over time, as more patients walk into Kingsway Hospitals seeking expert care, the number

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